

HPBooks

Educational, Board & Arcade Games in BASIC!

# 35 *AMAZING* GAMES

For Your  
**Commodore**  
**128**

John Mihalik



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**HPBooks®**

**35**  
**Amazing Games**  
**For Your**  
**COMMODORE 128**

**Educational, Board & Arcade Games**  
**in BASIC 7.0**

**John Mihalik**

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# Introduction

This book stresses one thing—your Commodore 128 computer can give you great fun! Even though you may use it for serious applications, you should not ignore its ability to give you hours of challenging entertainment. Computer games add that dimension to home-computing.

## ABOUT THE 35 GAMES IN THIS BOOK

Some game books give you short programs and tell *you* to add scoring, graphics and other interesting things. This book is different. It consists of 35 *complete* games. They have color, graphics, sound, musical interludes, split screens, instructions to players, and scoring. They feature the full capabilities of the Commodore 128 used in the 128 mode.

In addition to the program listing, each game has *suggestions* for possible programming variations. First enter the complete, working game. Try it as is. Then change it if you want to.

This book doesn't explain the rudiments of BASIC programming because I assume that you already have reference books to do that. What the book *does* supply is a variety of fun game programs that work.

The games are divided into three categories: Educational, Board and Arcade games. The first category includes word and number fun for children and older computer users. The second includes puzzle and logic games you could play on a board, such as Tic-Tac-Toe. The third category, arcade games, has moving graphics, like video games that cost money to play.

**How To Use**—Each game begins with a description of game rules, number of players, display, objective, scoring and keys to press. Don't skip this section. Read it carefully.

Then enter the program listing into your computer *exactly* as shown. The information on pages 6 and 7 tells you how. The listing is a reproduction of actual printout from tested, debugged, working programs. Because it is 40 characters wide, it looks like your display when it is in the 40-column mode, as it should be for 34 of the 35 games.

When you make typing mistakes—and you will—the game may not work as intended. Or, it may not work at all. You'll have to find your mistakes and fix them.

Play the game for a while. If you like it, save it on disk. Otherwise, you'll have to type in the game each time you want to play it.

**Between Games**—Before starting another game, either by typing one in or loading it from disk, you should clear the computer. This way, there will be no "residual" effects of the previous game. The simplest way to reset the computer is to depress the RUN/STOP and RESTORE keys at the same time.

A more "drastic" method is to depress the Reset button on the right side of the computer. This second way is similar to turning the computer off and then on.

**How to Change a Game**—After you've become familiar with a game, consider changing or improving it. Use the comments to the side of the computer printout as suggestions on how you can simplify the game, make it more complicated, speed it up, slow it down or supply different data. Only *some* of the possibilities are shown. Have fun experimenting!

Although this isn't a book about programming, changing the games will help you learn more about programming in BASIC 7.0. If you want to learn more, get *The Essential Commodore 128 User's Guide* by Jerry Willis, also published by HPBooks. It tells you all about your computer and how you can use BASIC to write and control programs.

Even if you don't know BASIC 7.0, you'll have good times with these games. If you already know some BASIC 7.0, all the better. This book can be a springboard to your own creative programming.

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## WHAT YOU NEED TO USE THIS BOOK

The games in this book are written *specifically* for the Commodore 128 computer in the 128 mode, used with a 40-column display. None of these games requires a lot of memory. Plenty of memory is left over for you to add your own features to any program.

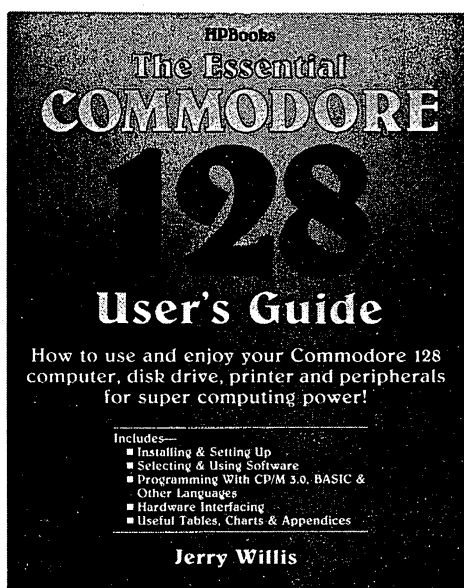
**Other Items**—To use the full capabilities of the Commodore 128, you need a color monitor. To display 80 columns, you need an RGB monitor. Only one game, *Translator*, is written for 80-column display.

Some arcade games should be played with a joystick. It's an inexpensive accessory that makes these games more enjoyable.

**What Else?**—I assume that you know how to use your computer hardware and that you're familiar with your computer keyboard. I also assume that you're eager to have fun with your computer and to learn something about BASIC as painlessly as possible.

If you think that typing an amazing game into your computer isn't painless enough, there's an easier way. Simply send a \$30 certified check or money order (for fastest service) and your name and address to the address below. You'll receive a floppy disk of all 35 games in this book.

MIKO WARE  
PO BOX 95759  
Seattle, WA 98145-2759



For more information about programming and using your Commodore 128 computer, I recommend this book. You can order it from the publisher, as shown on page 120.

## UNDERSTANDING PROGRAM PRINTOUTS

The program lines in this book are actual computer printouts of working games. To make the lines easier for you to copy, program lines are 40 characters long, the length of a program line when the Commodore 128 is used in the 40-column mode.

### USING THE KEY-COMBINATION TABLE

A special notation system is used for certain keystrokes. This avoids the difficult-to-read characters that Commodore uses for certain keystrokes. These characters are replaced in the program listings by notations appearing in brackets like these { }. The table on the next page summarizes the notations and keystrokes they represent.

For example, if you see {C/UP}, press the Cursor Up key. Or, if you see {RVON}, press the CONTROL and RVS ON keys at the same time. When you do, the screen will show the difficult-to-read character, not the notation used. In the case of the Cursor Up key, this is the letter Q in a reverse field.

### USING PROGRAMMING NOTES

Some programs also feature *Programming Notes* in the margin. These notes will help you figure out the number of times to depress the spacebar to produce a blank area in a PRINT statement. Other notes will help you create graphic characters shown in the program lines.

Or, you can use your computer to figure out the keystrokes required to produce these characters. On the front face of most keys you'll see two graphic characters. To put the one on the right in a program line, depress the SHIFT key and that particular key at the same time. To get the character on the left, depress the COMMODORE key and that key at the same time.

Programming Notes for graphic characters use this type of notation: SHIFT-M or COMMODORE-+, for example.

### PRACTICE

Reading and understanding these two pages *before* you try entering any of these games will prevent lots of frustration and mistakes. That's why I strongly urge you to practice some of these keystrokes right now!

Using your Commodore 128 in the direct mode, type in the keystrokes shown in the table on the opposite page. You will see the resultant symbols and learn the location of important keys.

In addition, familiarize yourself with the different graphic characters you can get using the COMMODORE or SHIFT key pressed at the same time as other keys.

**KEY-COMBINATION TABLE**

<b>Listing</b>	<b>Press Key(s)</b>
{INS}	SHIFT-INST/DEL
{DEL}	INST/DEL
{C/UP}	CURSOR UP
{C/DN}	CURSOR DOWN
{C/LF}	CURSOR LEFT
{C/RT}	CURSOR RIGHT
{HOME}	CLR/HOME
{CLR}	SHIFT-CLR/HOME
{RVON}	CONTROL-RVS ON
{RVOF}	CONTROL-RVS OFF
{BLK}	CONTROL-BLK
{WHT}	CONTROL-WHT
{RED}	CONTROL-RED
{CYAN}	CONTROL-CYN
{PURP}	CONTROL-PUR
{GRN}	CONTROL-GRN
{BLUE}	CONTROL-BLU
{YELO}	CONTROL-YEL
{ORNG}	COMMODORE-1
{BRN}	COMMODORE-2
{LRED}	COMMODORE-3
{GRY1}	COMMODORE-4
{GRY2}	COMMODORE-5
{LGRN}	COMMODORE-6
{LBLU}	COMMODORE-7
{GRY3}	COMMODORE-8

# Hangman

Sharpen your word skills by playing this classic game with your computer. The computer will think of a word. You guess it, letter by letter. A correct letter will be inserted into the appropriate space. Each wrong letter adds to the hangman. You are allowed 12 wrong guesses before being hung. When the hangman is complete, the whole word is displayed. The computer gives you 10 words. Your score is based on the length of correctly identified words and the number of missed letters.

A special feature is the alphabet display at the top of the screen. Each time a letter is chosen, it is highlighted and frozen so you can't use it again.

Fans of cowboy music will recognize the musical theme as *The Streets of Laredo*.

**Alteration**—For a "bare bones" version of the game, leave out program lines that create musical effects. These are lines 30-130 and 430. Be sure to keep other lines numbered as shown so **GOSUB** and **GOTO** statements remain correct.



```

10 REM  HANGMAN
20 SCNCLR
30 LET X=0
40 LET X=X+1:IF X<2 THEN GOSUB 60
50 GOTO 140
60 TEMPO 12
70 PLAY "V104T5U8X0":REM V1=GUITAR
80 A$="V104QC.QC03I$BQA$B04QC03$B.QAIGQF
   QCQC
90 B$="V103HFIFIFQGGAQ$BQAQGQFQGGRQC
100 C$="V104.QC03I$BQAQ$B04QC03Q$B.QAIGQ
   GQEQC"
110 D$="V103HFIFIFQGGAQ$BQAQGF.F"
120 PLAY A$:PLAY B$:PLAY C$:PLAY D$
130 RETURN
140 COLOR0,7:COLOR4,13:PRINTTAB(15)"(CLR
   ){WHT}{RVON}HANGMAN"
150 PRINT"(C/DN)THE COMPUTER WILL THINK
   OF 10 WORDS"
160 PRINT"AND YOU WILL TRY TO GUESS THEM
   BY":PRINT"GUESSING ALL THEIR LETTERS."
170 PRINT"(C/DN)TWELVE WRONG GUESSES BUI
   LD THE HANGMAN."
180 PRINT"THE ALPHABET WILL APPEAR AT TH
   E TOP OF"
190 PRINT"THE SCREEN TO REMIND YOU WHAT
   YOU HAVE":PRINT"ALREADY PICKED."
200 PRINT"(C/DN)HIT ANY KEY TO CONTINUE.
   ":GETKEYQ$
210 DIMW$(80),A(26),Z(80):Z(0)=80
220 FORX=1TO80:READW$(X):NEXT
230 FORX=1TO80:Z(X)=X:NEXT:FORX=0TO9
240 R=INT(RND(1)*Z(0)+1):W(X)=Z(R)
250 Z(R)=Z(Z(0)):Z(0)=Z(0)-1:NEXT
260 FORPL=0TO9:GOSUB680
270 CHAR1,1,20,"WORD #"+STR$(PL+1)
280 FORX=1TO LEN(W$(W(PL)))
290 CHAR1,10+2*X,20,"-":NEXT
300 CHAR1,1,22,"PICK A LETTER BY HITTING
   THE KEY"

```

**Programming Note**—The blank part of line 330 is equal to 32 spaces.

```

310 GETKEYQ$: IFQ$<"A"ORQ$>"Z" THEN 310
320 L=ASC(Q$)-64: IFA(L) THEN 310
330 CHAR1,1,22,"
      "
340 A(L)=1: CHAR1,6+L,1,Q$,1
350 P=INSTR(W$(W(PL)),Q$): IFP=0 THEN E=E+1
      : GOTO 400
360 FORX=1 TO LEN(W$(W(PL)))
370 IF MID$(W$(W(PL)),X,1)=Q$ THEN CHAR1,10
      +2*X,20,Q$: CL=CL+1
380 NEXT: IF CL<LEN(W$(W(PL))) THEN 300
390 CHAR1,1,21,"***SUCCESS***": CW=CW+1: G
      OTO 440
400 ON E GOSUB 720,790,850,870,900,920,94
      0,960,980,1010,1040,1070
410 IFE<12 THEN 300
420 CHAR1,1,21,"SORRY, THE WORD WAS "+W$
      (W(PL))
430 GOSUB 60
440 CHAR1,1,22,"HIT ANY KEY FOR NEXT WOR
      D"
450 GETKEYQ$: SCNCLE: E=0: CL=0
460 FORX=1 TO 26: A(X)=0: NEXT: NEXTPL
470 GRAPHIC: PRINT "{CLR}OUT OF TEN WORDS
      , YOU GUESSED" CW: PRINT "OF THEM CORRECTLY
      ."
480 PRINT "{C/DN}PLAY AGAIN (Y/N)?"
490 GETKEYQ$: IFQ$="Y" THEN RUN: ELSE IFQ$<>"
      N" THEN 490
500 END
510 DATA THE,AND,THAT,FOR,WITH
520 DATA WAS,HIS,NOT,BUT,HAVE
530 DATA YOU,WHICH,ARE,HER,HAD
540 DATA FROM,THIS,THEY,THEIR,SHE
550 DATA HAS,WERE,BEEN,HIM,ONE
560 DATA SO,WILL,THERE,WHO,WHEN
570 DATA WHAT,YOUR,MORE,WOULD,THEM
580 DATA SOME,THAN,MAY,UPON,ITS
590 DATA OUT,INTO,OUR,THESE,MAN
600 DATA LIKE,SHALL,GREAT,NOW,SUCH
610 DATA SHOULD,OTHER,ONLY,ANY,THEN
620 DATA ABOUT,THOSE,CAN,MADE,WELL
630 DATA OLD,MUST,SAID,TIME,EVEN
640 DATA NEW,COULD,VERY,MUCH,OWN
650 DATA MOST,MIGHT,FIRST,AFTER,YET
660 DATA TWO,END,EASY,FLY,BEGIN
670 REM SET UP SCREEN
680 GRAPHIC 1,1: COLOR 0,7: COLOR 1,2: COLOR 4,
      13
690 FORX=65 TO 90: CHAR1,X-58,1,CHR$(X): NEX
      T

```

**Alteration**—A simple vocabulary of commonly used English words is in **DATA** statements 510 to 660. Depending on the average length of the words, your Commodore 128 can store several thousand words. If you want to enter more than the 80 words in this program, you must make space for them in memory. Do this by increasing the value of **DIM W\$** in line 210 and also the value of **Z** in line 210 to equal the number of words in the list.

**Alteration**—Design the word list for a certain user. For example, make a list of foreign words for the person learning a foreign language. Or, make a list of simpler words for a child learning how to spell.

MORE →

```
700 RETURN
710 REM GALLOWS
720 BOX1,149,27,187,32,0,1
730 BOX1,187,32,182,142,0,1
740 FORX=0TO10STEP5
750 BOX1,122-X,142+X,192+X,147+X,0,1
760 NEXT
770 DRAW1,151,32 TO 151,37:RETURN
780 REM HEAD
790 CIRCLE1,152,47,15,10
800 CIRCLE1,152,48,2,2:BOX1,149,52,155,5
810 PAINT1,145,47
820 CHAR1,18,5,"--",1
830 RETURN
840 REM NECK
850 BOX1,150,57,154,62,0,1:RETURN
860 REM BODY
870 CIRCLE1,152,85,10,23:PAINT1,152,85
880 RETURN
890 REM R ARM
900 BOX1,141,65,137,94,20,1:RETURN
910 REM L ARM
920 BOX1,163,65,167,94,340,1:RETURN
930 REM R LEG
940 BOX1,145,97,140,132,10,1:RETURN
950 REM L LEG
960 BOX1,159,97,163,132,350,1:RETURN
970 REM R HAND
980 CIRCLE1,133,98,3,3:PAINT1,133,98
990 RETURN
1000 REM L HAND
1010 CIRCLE1,171,98,3,3:PAINT1,171,98
1020 RETURN
1030 REM R FOOT
1040 CIRCLE1,137,136,4,4:PAINT1,137,136
1050 RETURN
1060 REM L FOOT
1070 CIRCLE1,167,136,4,4:PAINT1,167,136
1080 RETURN
```

# Dr. Sigmund

Find out more about yourself by having the great psychiatrist Dr. Sigmund analyze you. Once on the couch, you are shown computer-generated ink blots. You enter your first impression about what you see and get instantly analyzed in the classic fashion. You get 14 analyses per visit. There are no scores and no losers. This is a great game for a party.

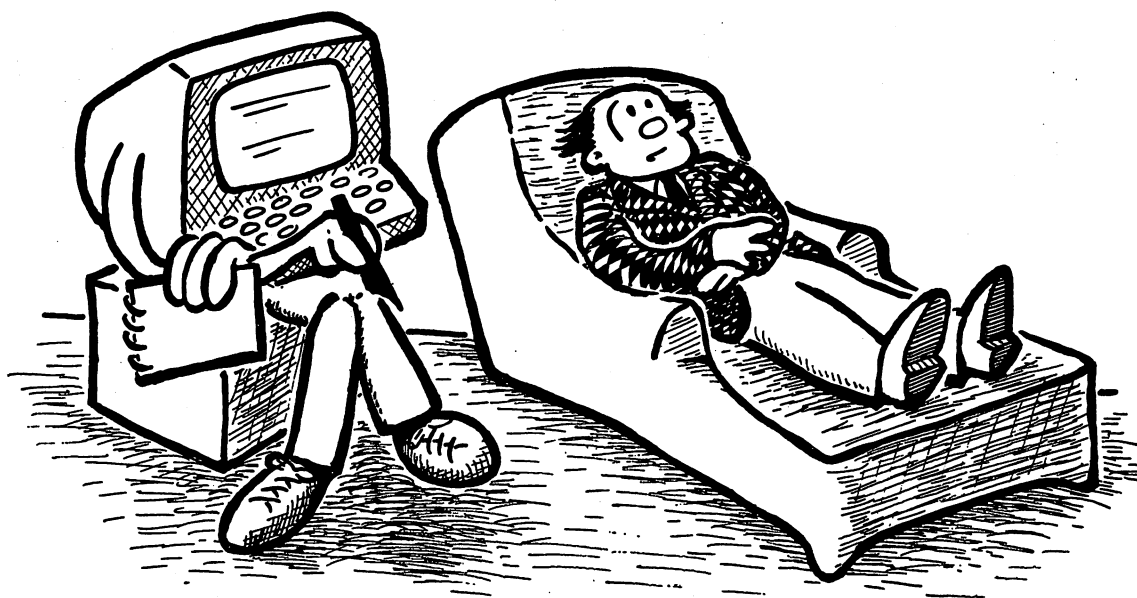
A special feature of this program is the split screen. The computer uses the top portion of the screen to draw ink blots and the bottom portion to display text.

```

10 REM DR. SIGMUND
20 SCNCLR
30 TEMPO 8
40 PLAY "V104T5U8X0":REM V1=GUITAR
50 PLAY "V204T5U8X0":REM V2=GUITAR
60 A$="V105SES#D"
70 B$="V105SES#DSES#DSE04SB05SD04SC"
80 C$="V104.IAV202SA03SEV104IRV203SA04SC
SESRV104SA"
90 D$="V104.IBV201SC03SES#G.IRV104SES#GS
B"
100 E$="V105QAV202SA03SESA04EV105SES#D"
110 F$="V104WAV202WA"
120 PLAY A$:PLAY B$:PLAY C$: PLAY D$
130 PLAY E$:PLAY B$:PLAY C$: PLAY D$

```

MORE →



```

140 PLAY F$
150 COLOR4,12:COLOR0,16:D$="{CLR}{C/DN}{
C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}
}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/
DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}"
:DIMRX(22),RY(22)
160 PRINT"{CLR}{RED}HELLO, I AM SANDY, A
SSISTANT TO":PRINT"DR. SIGMUND. "
170 INPUT"IS THIS YOUR FIRST VISIT";A$
180 IFLEFT$(A$,1)="N"THEN310
190 INPUT"{C/DN}WHAT IS YOUR NAME";B$
200 PRINT"{C/DN}YOU ARE IN LUCK, "B$",";
PRINT"DR. SIGMUND WILL SEE YOU NOW.":SLE
EP3
210 PRINT"{CLR}PLEASE, MAKE YOURSELF COM
FORTABLE ON":PRINT"THE COUCH."
220 PRINT"{C/DN}I SEE THAT YOU ARE A LIT
TLE BIT":PRINT"NERVOUS, "B$". ";
230 PRINT"TRY TO RELAX.":SLEEP5
240 PRINT"{C/DN}I HAVE SOME PRETTY PICTU
RES TO SHOW YOU."
250 PRINT"JUST LET YOUR MIND GO TO REST.
LOOK AT"
260 PRINT"THE PICTURES AND PICK FROM THE
LIST"
270 PRINT"WHAT THEY REMIND YOU OF. IF YO
U THINK"
280 PRINT"OF SOMETHING ELSE, JUST ENTER
THAT.":S=0:SLEEP8
290 SLEEP5:REM RORSHACK TEST
300 S=S+1:IFS=14THEN910
310 GRAPHIC2,1:COLOR1,7
320 DRAW1,159,0TO159,199TO160,199TO160,0
330 DRAW1,0,159TO319,159
340 DRAW1,0,0TO319,0
350 FORX=1TO20:RX(X)=INT(RND(1)*320):NEX
T:RX(0)=0
360 FORX=1TO22:RY(X)=INT(RND(1)*160):NEX
T:RY(0)=80
370 FORX=20TO22:RX(X)=INT(RND(1)*75)+75:
NEXT
380 PRINTD$"OK, HERE IS A PICTURE..."
390 FORX=1TO10
400 DRAW1,RX(X-1),RY(X-1)TORX(X),RY(X)
410 DRAW1,319-RX(X-1),RY(X-1)TO319-RX(X)
,RY(X)
420 NEXT:FORX=10TO12
430 A=RND(1)*180
440 XR=RND(1)*100:YR=RND(1)*100
450 CIRCLE1,RX(X),RY(X),XR,YR,,,A,5
460 CIRCLE1,319-RX(X),RY(X),XR,YR,,,360-
A,5

```

Alteration—Change the number of questions, variable S, in line 300 to a number other than 14.

**Alteration**—Change any word and its corresponding interpretation. For example, change **SPIDER** in lines 500 and 540 to a friend's name and change the comment in lines 690 and 700 to a special comment regarding your friend.

```

470 NEXT:FORX=13TO22
480 PAINT1,RX(X),RY(X)
490 PAINT1,319-RX(X),RY(X):NEXT
500 PRINT$ " SPIDER MOTHER CAT
    BUTTERFLY"
510 PRINT " SNAKE CAMEL ROPE R
    EINDEER"
520 PRINT " FATHER FACE FOOD I
    NK BLOT"
530 O$="":INPUTO$:PRINTD$;
540 IF O$="SPIDER" THEN 690
550 IF O$="MOTHER" THEN 710
560 IF O$="CAT" THEN 730
570 IF O$="SNAKE" THEN 750
580 IF O$="BUTTERFLY" THEN 770
590 IF O$="ROPE" THEN 790
600 IF O$="REINDEER" THEN 810
610 IF O$="FOOD" THEN 830
620 IF O$="FATHER" THEN 840
630 IF O$="INK BLOT" THEN 850
640 IF O$="FACE" THEN 870
650 IF O$="CAMEL" THEN 890
660 PRINT "TELL ME ABOUT YOUR CHILDHOOD."
    :INPUTP$
670 PRINTD$;:INPUT "GO ON...";P$:PRINTD$;
    :INPUT "HMM...TELL ME MORE.";P$
680 PRINTD$ "THAT IS ENOUGH FOR NOW. CALL
    ME TOMORROW ABOUT THIS.":GOTO290
690 PRINT "OBVIOUSLY YOU FEEL ENTANGLED.
    THE"
700 PRINT "SPIDER IS A SYMBOL OF YOUR FEA
    R OF":PRINT "FRUSTRATION.":GOTO290
710 PRINT "YOUR DEEP FEELINGS FOR YOUR MO
    THER ARE"
720 PRINT "ONLY NATURAL. DO NOT BE AFRAID
    TO LET":PRINT "THEM SHOW.":GOTO290
730 PRINT "SOMEWHERE IN YOUR SUB-CONSCIOU
    S YOU":PRINT "HAVE A FEAR OF CATS..."
740 PRINT "YOU STARTLE WHEN ONE CROSSES Y
    OUR PATH":PRINT "AT NIGHT.":GOTO290
750 PRINT "BEWARE THE SNAKE. YOU NEED TO
    CONTROL"
760 PRINT "YOURSELF IN TENSE SITUATIONS."
    :GOTO290
770 PRINT "THE BUTTERFLY SYMBOLIZES YOUR
    FREE"
780 PRINT "SPIRIT AND GREAT INNER JOY. LE
    T":PRINT "YOURSELF HAVE FUN.":GOTO290
790 PRINT "THE ROPE IS A SIGN OF THE STRO
    NG SUPPORT"

```

MORE →

```
800 PRINT"YOU OFFER YOUR FRIENDS. YOU HA  
VE GREAT":PRINT"INNER RESERVES.":GOTO290  
810 PRINT"YOU ARE BLESSED WITH A CHILDLI  
KE LOVE"  
820 PRINT"FOR NATURE. YOUR HEART IS PURE  
." :GOTO290  
830 PRINT"EITHER YOU ARE HUNGRY OR YOU D  
ESIRE TO":PRINT"FEED OTHERS.":GOTO290  
840 PRINT"YOUR FEELINGS FOR YOUR FATHER  
MUST":PRINT"SOMEDAY BE EXPLORED.":GOTO29  
0  
850 PRINT"YOU ARE A REALIST. UNFORTUNATE  
LY, YOU"  
860 PRINT"ARE WITHOUT IMAGINATION.":GOTO  
290  
870 PRINT"YOU ARE LIKE A NEWBORN CHILD;  
YOU ARE"  
880 PRINT"ATTRACTED TO FACES. YOU SEEK A  
CCEPTANCE AND LOVE.":GOTO290  
890 PRINT"ONE HUMP OR TWO?":PRINT"SERIOU  
SLY, YOU ARE ALONE IN A SPIRITUAL"  
900 PRINT"DESERT. YOU CAN PREPARE TO REE  
NTER THE":PRINT"WORLD.":GOTO290  
910 GRAPHICO:PRINT"{CLR}THANK YOU FOR CO  
MING."  
920 PRINT"I WILL SEE YOU AGAIN NEXT WEEK  
." :PRINT"PLEASE LEAVE $50 ON THE TV."
```

# Spatial Concepts

This fun program is enjoyed by young children. It combines the fun of picture-making with learning the concepts of up, down, left, right and in.

The child chooses from a list of objects: bird, child, duck and star. Then the child chooses where to place the object in the colorful castle and landscape displayed on the screen. The object can also be erased.

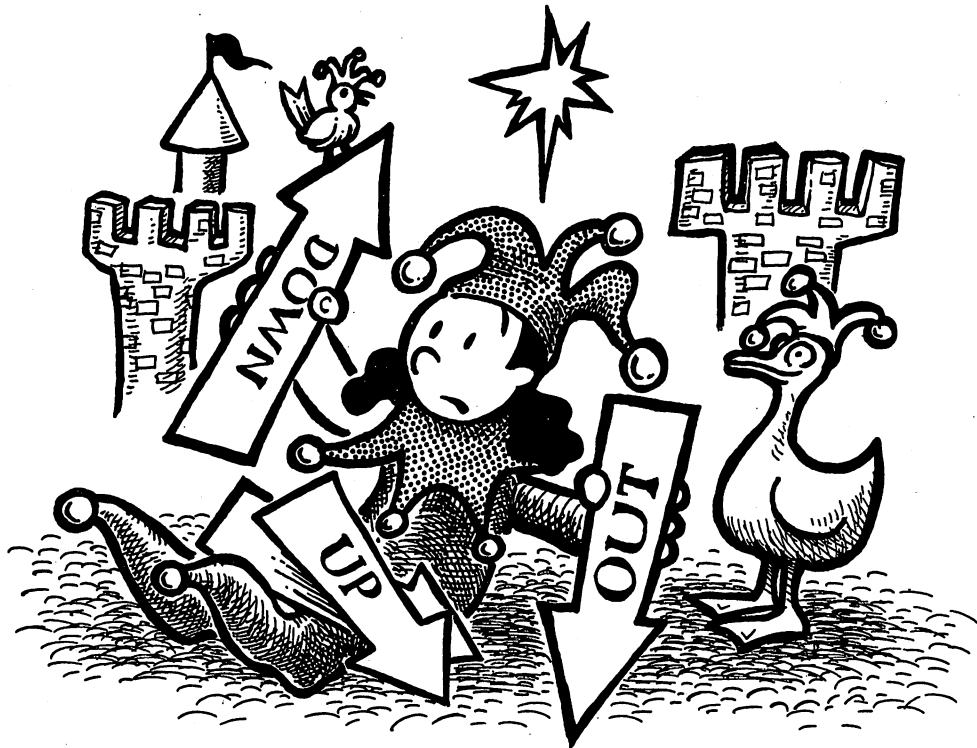
The child should play along with an older person—especially if the child can't read. Together they can create pictures and a story too! This game also features an adaptation of Carcassi's famous *Waltz in C*.

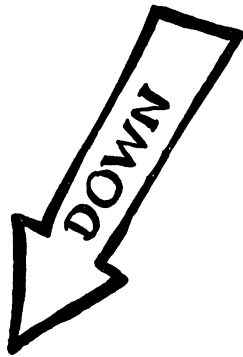
```

10 REM SPATIAL CON.
20 SCNCLR
30 TEMPO 16:REM WALTZ IN C BY CARCASSI
40 PLAY "V104T5U8X0":REM V1=GUITAR
50 PLAY "V204T5U8X0":REM V2=GUITAR
60 PLAY "V304T5U8X0":REM V3=GUITAR
70 A$="V103QG02.HC V204IRIEICIE V103QG"

```

MORE →





```

80 B$="V103.HG V204IRIEICIE V103QG"
90 C$="V103.HD V204IRIFIBIF V103QG"
100 D$="V102.HG V204IRIFIBIF V103QG"
110 E$="V103.HC V204IRIEICIE V103QG"
120 F$="V102.HA V204IRIEICIE V103QA"
130 G$="V103.HD V204IRI#FICI#F V103QA"
140 H$="V102HGV204HGV303HB"
150 PLAY A$:PLAY B$: PLAY C$: PLAY D$
160 PLAY E$:PLAY F$: PLAY G$: PLAY H$
170 D$="{HOME}{C/DN}{C/DN}{C/DN}{C/DN}{C
/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/D
N}{C/DN}{C/DN}":R$="{C/RT}{C/RT}{C/RT}{C
/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}
{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/R
T}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C
/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}
{C/RT}"
180 L$(1)=RIGHT$(D$,17)+LEFT$(R$,11)
190 L$(2)=D$+LEFT$(R$,29)
200 L$(3)="{HOME}{C/DN}" +LEFT$(R$,16)
210 L$(4)=LEFT$(D$,13)+"{C/RT}{C/RT}"
220 L$(5)=LEFT$(D$,13)+R$
230 PRINT"{CLR}"TAB(12)"{RVON}SPATIAL CO
NCEPTS"
240 PRINT"{C/DN}{C/DN}WE ARE ABOUT TO PL
AY A GAME TO LEARN THE";
250 PRINT"WORDS: UP, DOWN, LEFT, RIGHT,
AND IN."
260 PRINT"{C/DN}YOU WILL SEE A CASTLE WI
TH THOSE WORDS":PRINT"AROUND IT."
270 PRINT"{C/DN}EACH WORD IS AT A PLACE
NEAR THE CASTLE"
280 PRINT"THAT SHOWS WHAT IT MEANS."
290 PRINT"{C/DN}AT THE BOTTOM OF THE SCR
EEN YOU WILL"
300 PRINT"SEE THE NAMES OF THINGS TO PAI
NT WITH."
310 PRINT"YOU CAN USE THESE THINGS TO FI
NISH THE":PRINT"CASTLE PICTURE."
320 PRINT"{C/DN}PRESS ANY KEY TO CONTINU
E.":GETKEYQ$
330 PRINT"{CLR}I WILL ASK WHAT THING YOU
WANT TO ADD TO";
340 PRINT"THE PICTURE AND YOU MUST TYPE
ITS NAME."
350 PRINT"THEN I WILL ASK YOU WHERE YOU
WANT TO"
360 PRINT"PUT THE THING: UP, DOWN, LEFT,
RIGHT,":PRINT"OR IN."
370 PRINT"{C/DN}{C/DN}OK, LET US BEGIN..
."
```

**Alteration**—Change the castle design by altering statements in lines 460 to 630. If you are really adventurous, try replacing these lines with your own lines, using **DRAW** and **PAINT** statements to build a castle.

**Programming Note**—To help you with the number of times to press the spacebar in some program lines, here is a helpful summary. Where you see more than one large block of spaces, the number of spaces in each block is given, separated by a comma:

Line 460 1, 1, 3, 1, 1  
 Line 470 7  
 Line 480 5  
 Line 490 5  
 Line 500 2, 1, 2  
 Line 510 2, 1, 1, 2, 2, 1, 2, 2, 2, 1, 2  
 Line 520 4, 2, 5, 3, 3  
 Line 530 3, 3, 5, 3, 1, 1, 1  
 Line 540 15  
 Line 550 18  
 Line 560 10  
 Line 570 18  
 Line 580 6, 9  
 Line 590 6, 9  
 Line 600 6, 9  
 Line 610 5, 3  
 Line 620 5, 3  
 Line 630 5  
 Line 670 20  
 Line 750 5, 5, 5

**Programming Note**—Make the first graphic character in lines 610 and 620 by typing **COMMODORE-D**. Make the second one by typing **COMMODORE-C**.

```

380 PRINT"{C/DN}PRESS ANY KEY TO START."
:GETKEYQ$
390 FORX=1TO5:READT$(X):NEXT
400 DATA BIRD,CHILD,DOG,STAR,ERASE
410 FORX=1TO5:READW$(X):NEXT
420 DATA IN,DOWN,UP,LEFT,RIGHT
430 PRINT"{GRN}{CLR}{C/DN}{C/DN}{C/DN}"
440 FORX=1624TO2023:POKEX,160:NEXT
450 COLOR0,2:COLOR4,7
460 PRINTTAB(14)"{GRY2}{RVON}{RVOF}{RV
ON}{RVOF}{RVON}{RVOF}"
470 PRINTTAB(14)"{RVON}{RVOF}"
480 PRINTTAB(15)"{RVON}{RVOF}"
490 PRINTTAB(15)"{RVON}{RVOF}"
500 PRINTTAB(15)"{RVON}{BLK}{GRY2}{
RVOF}"
510 PRINTTAB(9)"{RVON}{RVOF}{RVON}{R
VOF}{RVON}{BLK}{GRY2}{RVOF}{RVO
N}{RVOF}{RVON}{RVOF}"
520 PRINTTAB(9)"{RVON}{RVOF}{RVON}
{RVOF}{RVON}{RVOF}"
530 PRINTTAB(9)"{RVON}{RVOF}{RVON}
{RVOF}{RVON}{BLK}{GRY2}{RVOF}"
"
540 PRINTTAB(9)"{RVON}{BLK}{GRY2}
{RVOF}"
550 PRINTTAB(9)"{RVON}{
RVOF}"
560 PRINTTAB(9)"{RVON}{BLK}{G
RY2}{BLK}{GRY2}{RVOF}"
570 PRINTTAB(9)"{RVON}{
RVOF}"
580 PRINTTAB(8)"{RVON}{BLUE}{GRY2}{WH
T}{GRY2}{BLUE}{GRY2}{RVO
F}"
590 PRINTTAB(7)"{RVON}{BLUE}{GRY2}{W
HT}{GRY2}{BLUE}{RVOF}"
600 PRINTTAB(6)"{RVON}{BLUE}{GRY2}{
WHT}{GRY2}{BLUE}{RVOF}"
"
610 PRINTTAB(7)"{RVON}{BLUE}{GRY2}
"{BLUE}"
620 PRINTTAB(8)"{RVON}{BLUE}{GRY2}
"{BLUE}"
630 PRINTTAB(20)"{RVON}{RVOF}{C/DN}
{C/DN}"
640 PRINT"{BLK}{C/RT}{C/RT}{C/RT}{C/RT}{
C/RT}BIRD CHILD DOG STAR ERASE{HOME}"
"
650 PRINTL$(1);"{RVON}{BLK}IN{RVOF}":PRI
NTL$(2);"{RVON}DOWN{HOME}"

```

MORE →

**Programming Note**—Make the graphic characters in line 780 by typing SHIFT-W, SHIFT-N, COMMODORE-+, SHIFT-M.

**Programming Note**—Make the graphic characters in line 800 by typing COMMODORE-N, COMMODORE-U, COMMODORE-J.

```

660 PRINTL$(3); "{RVON}UP{RVOF}":PRINTL$(
4); "{RVON}LEFT{RVOF}":PRINTL$(5); "{RVON}
RIGHT{RVOF}"
670 SP$="{HOME}"
680 INPUT "{HOME}{BLK}PAINT WITH";P$:PRIN
TSP$
690 N=0:FORX=1TO5:IFP$=T$(X) THENN=X
700 NEXT:IFN=0 THEN680
710 INPUT "{HOME}PAINT WHERE";W$:PRINTSP$
720 N=0:FORX=1TO5:IFW$=W$(X) THENN=X
730 NEXT:IFN=0 THEN710
740 C$="{WHT}":IFW$="DOWN" THENC$="{GRN}"
750 PRINTL$(N);C$"{RVON}      {C/DN}{C/LF
}{C/LF}{C/LF}{C/LF}{C/LF}      {C/DN}{C/L
F}{C/LF}{C/LF}{C/LF}{C/LF}      {HOME}"
760 C$="{RVON}{GRN}":IFW$<>"DOWN" THENC$=
"{BLK}"
770 IFP$="STAR" THENPRINTL$(N); "{C/DN}{BL
K}{C/RT}*"
780 IFP$="CHILD" THENPRINTL$(N);C$; "{C/RT
}o{C/DN}{C/LF}{C/LF}/\{C/DN}{C/LF}{C/LF
}H"
790 IFP$="BIRD" THENPRINTL$(N);C$; " ) {C/D
N}{C/LF}{C/LF}=>{C/DN}{C/LF}{C/LF}"
800 IFP$="DOG" THENPRINTL$(N);C$; "{C/DN}
/{C/DN}{C/LF}{C/LF}{C/LF}  "
810 IFP$="ERASE" THENPRINTL$(N); "{RVON}{B
LK}{C/DN}";W$(X)
820 GOTO680

```

# Mind Reader

Here's a fun guessing game in which you and the computer take turns guessing numbers. The program begins with an animated man (you can see his lips move) asking for the user's name. The name is used throughout the game.

The user has five chances to guess a number between 1 and 20. The computer man helps by giving *higher* and *lower* clues. The user then chooses either to think of a number or let the computer man think of a number. The user enters a number between 1 and 5, and the computer man has one chance to guess the number. After this process is repeated five times, the computer man reports the score.

**Alteration**—Try adding some music by adding lines before line 10. Create your own music or borrow lines from another game.

```

10 GOSUB550:REM MIND READER
20 PRINT"{CLR}":FORX=1TO16:PRINT:NEXT
30 PRINTCHR$(27)"T":REM SET SCREEN TOP
40 DIM W$(81),G$(5)
50 FORX=0TO81:READW$(X):NEXT
60 FORX=1TO5:READG$(X):NEXT
70 A=0:B=3:GOSUB380:INPUTN$
80 PRINT"{CLR}"N$, "":A=4:B=11:GOSUB390
90 SLEEP3:A=12:B=18:GOSUB380:PRINT
100 A=19:B=25:GOSUB390:SLEEP3
110 A=26:B=32:GOSUB380:PRINT
120 A=33:B=39:GOSUB390:SLEEP3
130 C=0:FORG=1TO5:K=0:M=INT(RND(1)*20)+1
140 A=9:B=10:GOSUB380:GOSUB420:K=K+1
150 A=11:B=11:GOSUB390:INPUT"(1-20)";Q$

```

MORE →

**Alteration**—Changing the number 20 in line 130 will change the range of guessed numbers. Also change the 20 in line 160 to agree with the change in line 130.



**Alteration**—Control the rate of “talking” by adjusting the range of T in line 400. Greater than 100 slows it; less than 100 speeds it up.

```

160 N=VAL(Q$):IFN<10RN>20THEN140
170 IFM>NTHENA=40:B=40:GOSUB380:SLEEP3
180 IFM<NTHENA=41:B=41:GOSUB380:SLEEP3
190 IFM=NTHENW$(48)=MID$(STR$(K),2):A=42
:B=49:GOSUB380:C=C+1:GOTO230
200 IFK<5THEN140
210 W$(54)=MID$(STR$(M),2)
220 A=50:B=54:GOSUB380
230 SLEEP3:NEXTG
240 W$(55)=N$:W$(58)=MID$(STR$(100*C/5),
2):A=55:B=60:GOSUB380:SLEEP3
250 A=61:B=61:GOSUB380:A=27:B=39:GOSUB39
0:SLEEP3
260 C=0:FORG=1TO5
270 W$(64)=G$(G):A=62:B=67:GOSUB380
280 INPUTQ$:IFQ$<"1"ORQ$>"5"THEN280:ELSE
N=VAL(Q$)
290 M=INT(RND(1)*5)+1:SLEEP1
300 IFM=NTHENA=68:B=71:GOSUB380:C=C+1:GO
TO320
310 A=72:B=74:GOSUB380
320 SLEEP2:NEXTG
330 SLEEP2:A=75:B=79:W$(77)=MID$(STR$(C*
20),2):GOSUB380
340 FORT=1TO1000:NEXTT:A=80:B=81:GOSUB38
0
350 INPUTN$
360 IFLEFT$(N$,1)="Y"THENCLEAR:GOTO40
370 GRAPHICO:SCNCLR:END
380 PRINT"{CLR}"
390 FORX=ATOB:GOSUB440:PRINTW$(X)" ";
400 FORT=1TO100:NEXT:GOSUB450
410 FORT=1TO100:NEXT:NEXT:RETURN
420 GOSUB440:PRINTG$(G)" ";;FORT=1TO100:
NEXT
430 GOSUB450:FORT=1TO100:NEXT:RETURN
440 SPRITE 1,1,1:RETURN:REM MOUTH OPEN
450 SPRITE 1,0:RETURN:REM CLOSED
460 DATAHELLO,WHO,ARE,YOU,YOU,ARE,ABOUT,
TO,PLAY,GUESS,THE,NUMBER.
470 DATAFIRST,I,WILL,THINK,OF,FIVE,NUMBE
RS,AND,YOU,WILL,TRY,TO,GUESS,THEM.
480 DATALATER,YOU,WILL,THINK,OF,FIVE,NUM
BERS,AND,I,WILL,TRY,TO,GUESS,THEM.
490 DATAHIGHER,LOWER,THAT,IS,RIGHT!,IT,T
OOK,YOU, ,TRIES.
500 DATATOO,BAD.,IT,WAS, , ,YOU,GOT, ,PE
RCENT,CORRECT.,NOW
510 DATAENTER,THE, ,NUMBER,FROM,1 - 5.,M
Y,GENIUS,OVERCOMES,ME.,I,WAS,WRONG.
520 DATA I,GOT, ,PERCENT,CORRECT,PLAY,AG
AIN Y/N

```

**Alteration**—Change the man's features (make him a woman?) by experimenting with the graphic commands in lines 540-910.

```

530 DATAFIRST,SECOND,THIRD,FOURTH,FIFTH
540 REM DRAW MAN
550 COLOR0,16:COLOR4,6:GRAPHIC4,1,16
560 COLOR 1,1:COLOR5,1
570 COLOR 2,7:COLOR3,13
580 CIRCLE1,15,15,2,2:PAINT1,15,15
590 SSHAPE A$,10,11,21,31
600 SPRSAV A$,1:MOVSPR1,134,98
610 SCNCLR:CIRCLE1,60,40,12,20
620 CIRCLE 1,66,37,3:CIRCLE 1,53,37,3
630 CIRCLE 2,66,37,1:CIRCLE 2,53,37,1
640 CIRCLE1,60,13,10,40,165,195,0,1
650 DRAW1,59,52 TO 61,52
660 PAINT 2,66,37:PAINT 2,53,37
670 DRAW 1,65,23 TO 60,30 TO 50,30 TO 47
,35
680 PAINT 1,60,22
690 DRAW 1,58,40 TO 62,44 TO 62,46 TO 61
,46
700 DRAW 1,60,47 TO 59,47 TO 58,46
710 CIRCLE 1,47,38,2,5,170,15
720 CIRCLE 1,72,38,2,5,340,190
730 DRAW 1,68,54 TO 71,60
740 DRAW 1,49,54 TO 46,60
750 DRAW 2,57,61 TO 61,61 TO 65,65 TO62,
68 TO 67,79 TO 60,90
760 DRAW 2,60,90 TO 52,80 TO 57,67 TO55,
66 TO 57,61
770 PAINT 2,60,80
780 DRAW 3,71,60 TO 76,60 TO 76,90 TO 73
,90 TO 72,76
790 DRAW 3,72,76 TO 71,90 TO 60,90 TO67,
79 TO 62,68 TO 65,65 TO 71,60
800 PAINT 3,75,70
810 DRAW 3,60,90 TO 52,80 TO 57,67 TO 55
,66 TO 46,60 TO 37,60
820 DRAW 3,37,60 TO 37,90 TO 40,90 TO 40
,75 TO 44,90 TO 60,90
830 PAINT 3,48,70:DRAW 1,38,91 TO 38,92
840 DRAW 1,75,91 TO 75,92
850 DRAW 1,44,91 TO 70,91 TO 70,120 TO 6
1,120 TO 61,110 TO 59,110
860 DRAW 1, 59,110 TO 57,110 TO 57,120 T
O 44,120 TO 44,91:PAINT 1,46,93
870 DRAW 2,47,121 TO 48,121 TO 48,125 TO
55,125 TO 58,130
880 DRAW 2,58,130 TO 47,130 TO 47,121
890 PAINT 2,48,128
900 DRAW 2,62,121 TO 63,121 TO 63,125 TO
70,125 TO 73,130 TO 62,130 TO 62,121
910 PAINT 2, 63,128:RETURN

```

---

# Poetry

The program creates *haiku*, an ancient form of Japanese poetry. The traditional form calls for three lines of five, seven and five syllables. The poems usually refer to seasonal changes and moods. Therefore, the phrases selected randomly by the program contain related vocabulary. The program can write some very nice haiku.

The music was written in the traditional Japanese style of *Koto*. Music plays to introduce the game and repeats each time a *haiku* is created.

```
10 REM POETRY
20 SCNCLR
30 LET X=0
40 LET X=X+1:IF X<2 THEN GOSUB 60
50 GOTO 130
60 TEMPO 12
70 PLAY "V104T4U8X0":REM V1=FLUTE
80 A$="V103 HAHAWB HAQBQAHB QAQFWE"
90 B$="V103 QEQQAQHB QAQFQE 02QCWB03R"
100 PLAY A$:PLAY B$
110 RETURN
```



**Alteration**—Change the second number in the **COLOR** statements of line 130 to change the color of the background (**COLOR 0**) and the border (**COLOR 4**). Use values from 1 to 16.

**Alteration**—Eliminate the music before each *haiku* by changing line 290 to **PRINT**. This drops the music subroutine and inserts a blank line.

**Alteration**—Change the phrases used to form the *haiku* by changing the **DATA** statements in lines 330-420. Be sure to give each new phrase the same number of syllables as the phrase it replaces.

```

120 REM "POETRY"
130 COLOR0,2:COLOR4,4
140 FORX=0TO9:READF$(X):NEXT:FORX=0TO7:R
EADS$(X):NEXTX
150 FORX=0TO7:READT$(X):NEXTX
160 PRINT"{CLR}":PRINTTAB(17)"{RVON}{GRY
1}POETRY{RVOF}"
170 PRINT"{C/DN}{C/DN}HELLO HONORABLE US
ER."
180 PRINT"{C/DN}I AM MIKO, A JAPANESE HA
IKU PROGRAM."
190 PRINT"{C/DN}PRESS ANY KEY AND I WILL
BE PLEASED TO WRITE A POEM FOR YOU."
200 PRINT"{C/DN}HAIKU IS AN ANCIENT FORM
OF POETRY."
210 PRINT"IT IS AN HONOR TO WRITE FOR YO
U."
220 PRINT"{C/DN}HIT ANY KEY TO START."
230 GETKEYQ$
240 A=INT(RND(8)*10):B=INT(RND(8)*8):C=I
NT(RND(6)*8)
250 PRINT"{CLR}{C/DN}{C/DN}{C/DN}{C/DN}{
C/DN}{C/DN}{C/DN}{C/DN}"
260 PRINTTAB(20-LEN(F$(A))/2);F$(A)
270 PRINTTAB(20-LEN(S$(B))/2);S$(B)
280 PRINTTAB(20-LEN(T$(C))/2);T$(C)
290 GOSUB 60
300 PRINT"{C/DN}{C/DN}{C/DN}      HIT {RVO
N}R{RVOF} KEY TO RECEIVE A NEW POEM."
310 GETKEYQ$
320 IFQ$="R"THEN240:ELSEPRINT"{C/DN}GOOD
BYE.":END
330 DATATHE GRAY MOUNTAINS HOST,TODAY I
SAW THE,SPLASHES IN THE POND
340 DATANOW CHERRY BLOSSOMS,DROPPING FRO
M BRANCHES,FRESHLY DRAWN CHALK LINES
350 DATAWINTER HILLSIDES HOST,NOW RED-FA
CED CHILDREN,A MOONLIT QUIET
360 DATAA GARDEN CHANGES,MOMENTARY FLASH
ES OF,SQUIRREL GATHERING ACORNS
370 DATADISTURB THE REFLECTION OF,SWIRL
IN THE TWILIGHT COOLNESS
380 DATARED LEAVES PROVIDE RAKE FODDER,R
EFLECT IMAGINATION
390 DATATHE LAUGHTER AND SNOWY PLAY,CATC
H RAYS OF BROKEN MOONLIGHT
400 DATATHE SUMMER LIGHTNING,WINTER IS C
OMING,A MOONLIT QUIET,A GARDEN CHANGES
410 DATAFUEL FOR CHILDREN'S PLAY,OF SUMM
ER CHILDREN,OF RED-FACED CHILDREN
420 DATASPLASHES IN THE POND

```

24



**Programming Tip**—This program uses split-screen graphics. You can draw things in multicolor graphics on the top part of the screen.

```

210 PRINTCL$"SORRY, THE ANSWER IS"A+B
220 PRINTD$;TAB(P);E$;P=P+3:PRINTD$;TAB(
P);"{C/DN}{C/DN}"U$
230 SOUND1,30000,400,1,20000,10,3
240 PRINTCL$"{RVON}{BLUE}  SPLASH!!!
"
250 V=15:DOWHILEV>.1:V=V-.1:VOL V:LOOP
260 SLEEP3:GOTO310
270 PRINTCL$"{YELO}{RVON}  CORRECT!  "
280 SLEEP1:PRINTD$;TAB(P);E$;P=P+7:PRINT
D$;TAB(P);U$"{C/DN}{C/LF}{C/LF}H"
290 IFP<35THEN180
300 PRINTCL$"{YELO}YUM! YUM! EAT WELL!!!
"
310 PRINT"{C/DN}{C/DN}TRY AGAIN (Y/N)?"
320 GETKEYQ$:IFQ$="Y"THENPRINT"{CLR}":GO
TO80:ELSEIFQ$<>"N"THEN320
330 PRINTCHR$(27)"L{HOME}{HOME}":GRAPHIC
0,1:END

```

# Spelling Bee

Here's an educational game of great versatility, providing entertainment and instruction. The program features a bee that moves across the screen to the sound of an adapted *Flight of the Bumblebee*. As the bee moves, it leaves behind it a scrambled word. The object is to unscramble the word and enter the correct spelling.

**Alteration**—Change the number following T in line 60 to a value from 1 to 9 to change the instrument that plays music. For example,  
 60 PLAY "V104T9U8X0": REM V1 = XYLOPHONE



```

10 REM  SPELLING BEE
20 SCNCLR
30 X=0:LET X=X+1:IF X<2 THEN GOSUB 50
40 GOTO 190
50 TEMPO 18
60 PLAY "V104T7U8X0":REM V1=ORGAN
70 A$="V105SES#DSDS#CSCSDS#CSC04SB"
80 B$="V105SC04SBS#BSDS#GSGS#FSF"
90 C$="V104SES#DSDS#CSDS#CSC03SB"
100 D$="V104SC03SBS#ASAS#GSGS#FSF"
110 E$="V103SES#DSDS#CSDS#CSC02SB"
120 F$="V103SES#DSDS#CSCSFSSSES#D"
130 G$="V103SES#DSDS#CSCS#CSDS#D"
140 H$="V102B"
150 PLAY A$:PLAY B$:PLAY C$:PLAY D$
160 PLAY E$:PLAY E$:PLAY F$:PLAY G$
170 PLAY F$:PLAY G$:PLAY E$:PLAY H$
180 RETURN
190 W=30:DIMW$(W),Z(W):X=RND(O)
200 COLOR4,7:COLOR0,1:PRINT"{CLR}{CYAN}{C/DN}"
210 PRINT"WELCOME TO SPELLING BEE."
220 PRINT"{C/DN}YOU WILL SEE THE BEE FLY ACROSS THE"
230 PRINT"SCREEN, LEAVING LETTERS AS IT GOES."
240 PRINT"{C/DN}THESE LETTERS ARE THE LETTERS OF A"
250 PRINT"SCRAMBLED WORD. YOU MUST UNSCRAMBLE THE"
260 PRINT"WORD AND ENTER THE CORRECT SPELLING TO":PRINT"RECEIVE POINTS."
270 PRINT"{C/DN}{C/DN}GOOD LUCK... HIT ANY KEY TO CONTINUE.":GETKEYQ$
280 GOSUB670
290 FORX=1TOW:READW$(X):NEXT
300 FORX=1TOW:Z(X)=X:NEXT
310 Z=W:FORX=0T09
320 R=INT(RND(1)*Z+1):S(X)=Z(R)
330 Z(R)=Z(Z):Z=Z-1:NEXT
340 FORX=0T09
350 PRINT"{CLR}WORD"X+1,"SCORE ="SC
360 L=LEN(W$(S(X))):IFL>10THENPRINTW$(S(X))"IS TOO LONG OF A WORD.":END
370 FORY=1TOL:Z(Y)=Y:NEXT
  
```

```

380 Z=L:FOR Y=1 TO L
390 R=INT(RND(1)*Z+1):L(Y)=Z(R)
400 Z(R)=Z(Z):Z=Z-1:NEXT
410 GOSUB 50
420 SPRITE1,1:MOVSPR1,90 #2
430 FOR Y=1 TO L
440 DOUNTILRSPPOS(1,0)>50+24*Y:LOOP
450 CHAR1,4+3*Y,11,MID$(W$(S(X)),L(Y),1)
460 NEXT
470 IFRSPPOS(1,0)>320 THEN SPRITE1,0:MOVSP
R1,0,117:ELSE 470
480 INPUT "{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
ENTER CORRECT SPELLING";C$:PRINT
490 IFC$=W$(S(X)) THEN PRINT TAB(13)"{RVON}
THAT IS CORRECT!":SC=SC+125:GOTO 510
500 PRINT TAB(10)"{RVON} SORRY, IT WAS "W$
(S(X))".
510 SLEEP 2:NEXT X
520 PRINT "{CLR}{C/DN}"
530 IF SC>900 THEN PRINT "YOU WIN THE SPELLI
NG BEE!":GOTO 570
540 IF SC>800 THEN PRINT "VERY WELL DONE.":G
OTO 570
550 IF SC>700 THEN PRINT "NOT BAD.":GOTO 570
560 PRINT "YOU NEED PRACTICE."
570 PRINT "PLAY AGAIN (Y/N)?"
580 GETKEY Q$:IF Q$="Y" THEN 300
590 IF Q$<>"N" THEN 580:ELSE END
600 DATA THAT, THEIR, HOUSE, BOAT, PEACE
610 DATA DRAGON, ORANGE, GAME, LOVE, HOPE
620 DATA WHEN, FLY, BEGIN, COMPUTER, BOOK
630 DATA YELLOW, HORSE, CHILD, FATHER, PEN
640 DATA PLANT, PICTURE, LIGHT, RUG, HELP
650 DATA SPELL, CUP, PENCIL, SHOE, SHIRT
660 REM BEE
670 COLOR 1,4:GRAPHIC 1,1
680 BOX 0,1,2,2,45,45
690 DRAW 1,11,19 TO 25,11 TO 25,26 TO 11,19
700 DRAW 1,13,17 TO 13,20
710 DRAW 1,17,15 TO 17,22
720 DRAW 1,21,13 TO 21,24
730 DRAW 1,25,26 TO 31,22 TO 25,22
740 CIRCLE 1,29,14,6:PAINT 1,14,18
750 PAINT 1,21,22:DRAW 1,27,13
760 DRAW 1,31,13:DRAW 1,29,17 TO 32,17
770 DRAW 1,34,13 TO 33,18
780 DRAW 1,24,7 TO 27,10
790 DRAW 1,34,7 TO 31,10
800 CIRCLE 1,20,14,3
810 SSHAPE A$,11,7,34,28:SPRS AV A$,1
820 SCNCLR:SPRITE 1,0,8,0,1,1
830 MOVSPR1,0,117:GRAPHIC 0,1:RETURN

```

**Alteration**—Change the number of words in the game by adding more words in **DATA** statements between lines 650 and 660. Be sure to increase the value of **W** in line 190 to reflect the new total number of words in the vocabulary.

**Alteration**—Make the bumblebee appear smaller and in higher resolution by leaving off the last two 1's in line 820, i.e., **820 SCNCLR:SPRITE 1,0,8,0**

For fun, try these other versions of line 820:  
**820 SCNCLR:SPRITE 1,0,8,0,0,1**  
**820 SCNCLR:SPRITE 1,0,8,0,1,0**  
**820 SCNCLR:SPRITE 1,0,7,0**

# Speed Reading

A fundamental principle of speed reading is that we retain more if we read words in phrases, rather than one at a time. This program helps develop that skill. It flashes phrases quickly then tests retention of the information with true/false questions.

Two players are needed. When prompted by the computer, player 1 types in five statements and five related true/false questions along with the answer. Then player 2 decides on the time duration he'll see each phrase. Time can be as short as 1 second. After the phrases are flashed, player 2 is tested with the questions. Score is based on correct answers and the time the player had to read questions.

Then the players change roles and player 2 does the speed-reading test.

```
10 REM SPEED READING
20 Q=5:DIMP$(2,Q),Q$(2,Q),A$(2,Q)
30 COLOR0,7:COLOR1,2:COLOR4,13
40 PRINT"{CLR}{WHT}"TAB(14)"{RVON}SPEED
   READING"
50 PRINT"{C/DN}WELCOME TO THE GAME OF SP
   EED AND"
60 PRINT"CONCENTRATION."
70 PRINT"{C/DN}YOU MUST BE ABLE TO GRASP
   WHOLE"
```



**Alteration**—Change the game into an arithmetic flashcard game. Enter math problems and answers instead of sentences. Change appropriate **PRINT** statements if you do this.

**Alteration**—Change the game into a translation exercise. Use foreign and English equivalents instead of sentences. Change appropriate **PRINT** statements if you do this.

**Alteration**—If you prefer to run this game in the 80-column mode (assuming you have a monitor that can do it) alter the **PRINT** statements of lines 350 and 390 to say (80 CHARACTERS) instead of (40 CHARACTERS). In addition, change the 40 in lines 370 and 410 to 80. Rearrange **PRINT** statements in the program to make the game use more of the screen. Be sure to enter the game in the 80-column mode.

```

80 PRINT"PHRASES IN A MOMENT. AFTER THE
PHRASES"
90 PRINT"ARE DISPLAYED, THERE WILL BE QU
ESTIONS"
100 PRINT"ABOUT THE CONTENT. CORRECT ANS
WERS"
110 PRINT"SCORE POINTS.":PRINT"THE MORE
DIFFICULT THE TIME FACTOR, THE"
120 PRINT"MORE POINTS EARNED.":PRINT"{C/
DN}ONE PLAYER ENTERS FIVE PHRASES, FIVE"
130 PRINT"QUESTIONS, AND THE FIVE ANSWER
S."
140 PRINT"THE SECOND PLAYER ENTERS THE T
IME"
150 PRINT"FACTOR BY ENTERING THE NUMBER
OF"
160 PRINT"SECONDS FOR WHICH THE PHRASES
ARE":PRINT"TO BE DISPLAYED."
170 PRINT"{C/DN}HIT ANY KEY FOR MORE INS
TRUCTIONS."
180 GETKEYQ$
190 PRINT"{CLR}ALL FIVE PHRASES WILL BE
SHOWN AND THEN"
200 PRINT"ALL FIVE QUESTIONS WILL BE ASK
ED."
210 PRINT"{C/DN}THEN THE SECOND PLAYER W
ILL HAVE A TURN."
220 PRINT"ALL QUESTIONS WILL BE TRUE OR
FALSE"
230 PRINT"QUESTIONS. TRUE WILL BE INDICA
TED BY A"
240 PRINT"T AND FALSE WILL BE INDICATED
BY AN F."
250 PRINT"{C/DN}HERE IS AN EXAMPLE:"
260 PRINT"{C/DN}{RVON}PHRASE:{RVOF} THIS
IS A COMPUTER GAME."
270 PRINT"{C/DN}{RVON}QUESTION:{RVOF} T
OR F":PRINT"THIS IS A CARD GAME."
280 PRINT"{C/DN}{RVON}ANSWER:{RVOF} F"
290 PRINT"{C/DN}HIT ANY KEY TO START."
300 GETKEYQ$:P=1
310 INPUT"{CLR}{C/DN}PLAYER ONE'S NAME";
N$(1)
320 INPUT"{C/DN}PLAYER TWO'S NAME";N$(2)
330 PRINT"{CLR}BEGIN NOW "N$(P)". "
340 FORX=1TOQ:PRINT"{C/DN}ENTER PHRASE #
"X
350 PRINT"{C/DN}PHRASES MAY NOT BE MORE
THAN 1 LINE LONG":PRINT"(40 CHARACTERS).
{C/DN}"
360 INPUTP$(P,X)
370 IFLEN(P$(P,X))>40THEN350

```

MORE →

```
380 PRINT"{C/DN}ENTER QUESTION #"X
390 PRINT"{C/DN}QUESTIONS MAY NOT BE MOR
E THAN 1 LINE":PRINT"LONG (40 CHARACTERS
).{C/DN}"
400 INPUTQ$(P,X)
410 IFLEN(Q$(P,X))>40THEN350
420 PRINT"{C/DN}ENTER ANSWER #"X
430 INPUTA$(P,X)
440 IFA$(P,X)<>"T"AND A$(P,X)<>"F"THENPRI
NT"ANSWER MUST BE T OR F.":GOTO430
450 PRINT"{CLR}":NEXTX
460 K=1:IFP=1THENK=2
470 PRINT"OK "N$(K)".":PRINT
480 W(K)=0:S(K)=0
490 PRINT"ENTER THE NUMBER OF SECONDS EA
CH PHRASE"
500 INPUT"WILL BE SHOWN";S:IFS>10THENPRI
NT"TOO LONG!":GOTO490
510 FORX=1TOQ:PRINT"{CLR}{RVON}PHRASE #"
X:PRINT"{C/DN}{C/DN}"P$(P,X)
520 TI$="000000"
530 CHAR1,17,0,RIGHT$(TI$,2)+" SEC":IFVA
L(TI$)<STHEN530
540 PRINT"{CLR}":SLEEP2:NEXTX
550 FORX=1TO5:PRINT"{CLR}{RVON}QUESTION
#{RVDF}"X
560 PRINT"{C/DN}{C/DN}"Q$(P,X)
570 INPUT"{C/DN}YOUR ANSWER";A$:A$=LEFT$(
A$,1)
580 IFA$<>"T"AND A$<>"F"THENPRINT"{C/DN}T
HESE ARE T OR F QUESTIONS.":GOTO570
590 IFA$=A$(P,X)THENS(K)=S(K)+700-S:PRIN
T"{C/DN}{RVON}CORRECT":GOTO620
600 W(K)=W(K)+1:PRINT"{C/DN}{RVON}INCCORR
ECT":PRINTP$(P,X)
610 SLEEP2:NEXTX
620 SLEEP2:NEXTX
630 IFP=1THENP=2:GOTO330
640 PRINT"{CLR}{C/DN}{C/DN}"N$(1)" SCORE
:"S(1),5-W(1)"CORRECT"
650 PRINT"{C/DN}{C/DN}"N$(2)" SCORE:"S(2
),5-W(2)"CORRECT"
660 IFS(1)>S(2)THENPRINT"{C/DN}{C/DN}"N$(
1)" WINS!"
670 IFS(2)>S(1)THENPRINT"{C/DN}{C/DN}"N$(
2)" WINS!"
```

# Pre-School Counter

Here's a useful educational game that helps young children learn counting up to 10. It's also good for introducing a computer to the child. It's easy to run and play.

The computer greets the player and then asks him to count the squares displayed. The user answers by entering a number. The computer then responds. If the answer is correct, the user is rewarded with a smiling face drawn by the computer. If the answer is incorrect, the face's smile becomes a frown. The correct answer is then displayed.

After 10 exercises, the computer gives a score.

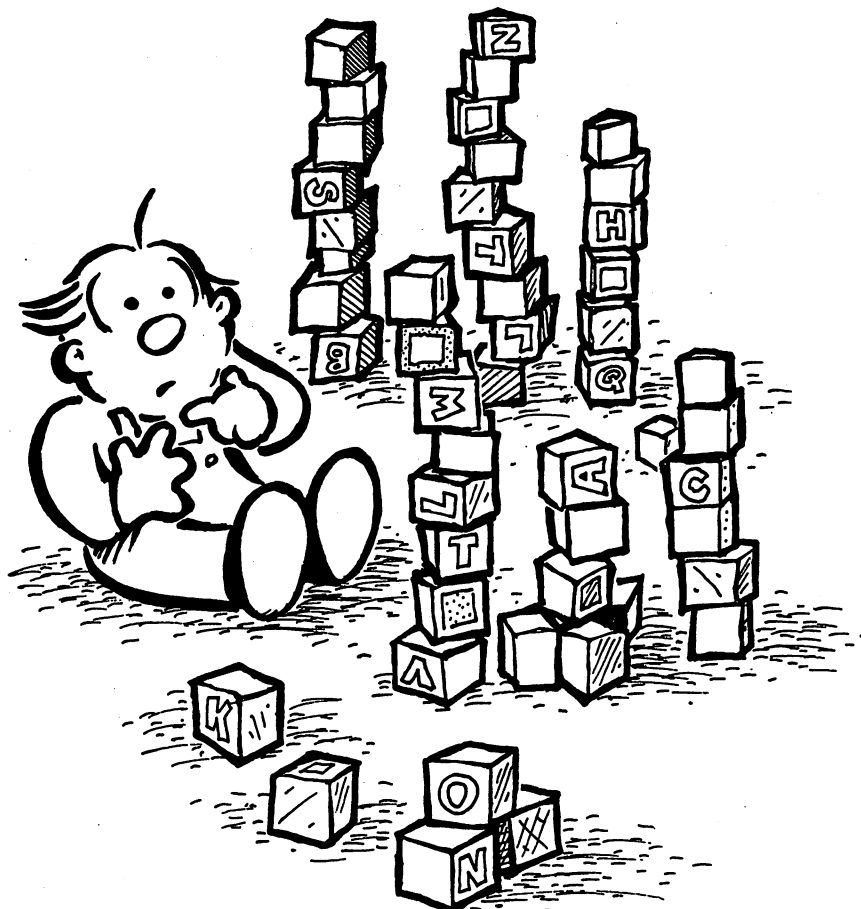
**Programming Tip**—The program uses a split screen. **GRAPHIC 2,1** in line 30 sets the split-screen mode and **PRINT CHR\$(27)"T"** in line 180 sets the new top of screen at row 19.

```

10 REM PRE-SCHOOL COUNTER
20 COLOR1,2:COLOR0,13:COLOR4,6
30 GRAPHIC2,1:CIRCLE1,160,84,27,5
40 SSHAPE OP$,130,75,189,95
50 SCNCLR1:CIRCLE1,160,83,27,2
60 SSHAPE CL$,130,75,189,95
70 SCNCLR1:CIRCLE1,160,8,90,75,158,202
80 CIRCLE1,160,44,50,45,140,220
90 SSHAPE SM$,130,75,189,95
100 SCNCLR1:CIRCLE1,160,159,90,75,338,38
2

```

MORE →



**Alteration**—The face is drawn by lines 130-160. Add more graphic commands to give the face more features. Be careful to not draw over the area where the mouth goes.

**Alteration**—Use higher numbers by changing line 220 to **220 SQ = INT(RND(1)\*25)+1: etc.**

**Programming Note**—Make the graphic character in line 220 by typing **SHIFT-Q**.

```
110 CIRCLE1,160,123,50,45,320,400
120 SSHAPE FR$,130,75,189,95
130 SCNCLR1:CIRCLE1,160,60,50,50
140 CIRCLE1,180,45,10,5:CIRCLE1,180,45,2
,2
150 CIRCLE1,140,45,10,5:CIRCLE1,140,45,2
,2
160 CIRCLE1,160,62,7,7
170 GSHAPE CL$,130,75
180 PRINT"{CLR}{WHT}":FORX=1TO18:PRINT:N
EXT:PRINTCHR$(27)"T"
190 C=0:FORQ=1TO10
200 FORX=1TO3:GOSUB370:READT$:PRINTT$ "
;
210 GOSUB380:NEXTX
220 SQ=INT(RND(1)*10)+1:FORY=1TOSQ:CHAR1
,1+2*Y,16,"●":NEXT
230 INPUTA:IFA<>SQTHEN250
240 C=C+1:PRINT" {RVON}CORRECT!!{RVOF}":
GOSUB400:SLEEP2:GOTO270
250 PRINT" {RVON}INCORRECT{RVOF}":GOSUB3
90:SLEEP2:GOSUB380
260 PRINT" THE ANSWER IS"SQ:SLEEP3
270 GOSUB380:PRINT"{CLR}":RESTORE:CHAR1,
3,16,"":NEXTQ
280 GOSUB370:PRINT" OUT OF TEN TRIES,":S
LEEP1
290 GOSUB380
300 GOSUB370:PRINT"YOU GOT"
310 GOSUB380
320 GOSUB370:PRINTC"RIGHT."
330 GOSUB380
340 PRINT"{C/DN}PLAY AGAIN (Y/N)?"
350 GETKEYQ$:IFQ$="Y"THENRUN:ELSEIFQ$<>"
N"THEN350
360 END
370 GSHAPE OP$,130,75:RETURN
380 GSHAPE CL$,130,75:RETURN
390 GSHAPE FR$,130,75:RETURN
400 GSHAPE SM$,130,75:RETURN
410 DATAHOW,MANY,CIRCLES
```

# Keyboard Shooting Gallery

This game improves keyboard skills. You're at a carnival shooting gallery containing four animal targets. In each target a letter appears for a short time. You score points by typing letters displayed in the animals.

The game has three levels of difficulty, so as you become a better typist, you can make the game more challenging. At the expert level, "hunt-and-peck" typists will have trouble scoring well.

**Alteration**—To include other keyboard symbols (such as numbers, commas, periods, etc.), make these changes:

```
20 DIM A$(55): GOSUB 330
30 FOR X=0 TO 55: A$(X) = CHR$(X+65): NEXT X
160 FOR Y=1 TO 4: F(Y)=0: L$(Y) = A$(
  (RND(1)*56) : NEXT
```

```
10 REM KEYBOARD SHOOTING GALLERY
20 DIM A$(25): GOSUB 330
30 FOR X=0 TO 25: A$(X)=CHR$(X+65): NEXT X
40 PRINT "{CLR}{GRN}WELCOME TO {RVON}KEYB
OARD SHOOTING GALLERY{RVOF}."
50 PRINT "{C/DN}LETTERS WILL APPEAR BELOW
EACH ANIMAL."
60 PRINT "YOU WILL HAVE A SHORT TIME TO E
NTER"
70 PRINT "THE SAME LETTERS."
80 PRINT "{C/DN}SIMPLY TOUCH THE CORRECT
LETTERS TO": PRINT "GET POINTS."
90 PRINT "{C/DN}1) EASY": PRINT "2) HARD": P
RINT "3) EXPERT"
```

MORE →



```

100 INPUT "{C/DN}ENTER 1,2 OR 3";L
110 IFL<1ORL>3THEN90
120 PRINT "{CLR}":FORX=1TO4:SPRITE X,1:NEXT
130 CHAR1,6,7,"BEE":CHAR1,23,7,"FISH"
140 CHAR1,6,13,"OWL":CHAR1,23,13,"DOG"
150 T=20-L*5:X=0
160 FORY=1TO4:F(Y)=0:L$(Y)=A$(RND(1)*26):NEXT
170 CHAR1,10,9,L$(1):CHAR1,28,9,L$(2)
180 CHAR1,10,15,L$(3):CHAR1,28,15,L$(4)
190 I=0:C=0
200 CHAR1,14,0,"SCORE =" +STR$(S),1
210 GETKEYQ$
220 FORY=1TO4:IFQ$=L$(Y)ANDF(Y)=0THENS=S+10:C=C+1:F(Y)=1
230 IFC=4THENI=T:Y=4
240 NEXTY
250 I=I+1:IFI<TTHEN200
260 X=X+1:IFX<10THEN160
270 FORX=1TO4:SPRITE X,0:NEXT
280 PRINT "{CLR}"TAB(15)"{RVON}GAME OVER."
290 PRINTTAB(16)"{RVON}{C/DN}{C/DN}YOU WIN."
300 PRINTTAB(13)"{RVON}{C/DN}{C/DN}FINAL SCORE:{RVOF}"S
310 END
320 REM DRAW FISH
330 COLOR 0,2:COLOR4,5:GRAPHIC1,1
340 CIRCLE 1,26,19,5,6:PAINT1,26,17
350 CIRCLE 1,25,20,5,5,210,310
360 PAINT 1,21,19
370 DRAW 1,22,24 TO 16,23 TO 19,29 TO 22,24
380 DRAW 1,22,16 TO 19,16:DRAW 1,20,17 TO 18,17:DRAW 1,17,18
390 PAINT 1,20,26:DRAW1,18,23 TO 24,23
400 DRAW 0,30,22:CIRCLE0,26,17,1
410 SSHAPE B$,11,10,34,31:SPRSAVB$,2
420 SCNCLR:REM DRAW DOG
430 DRAW 1,25,11 TO 29,15 TO 33,15
440 DRAW 1,32,15 TO 32,17 TO 31,18 TO 29,18 TO 28,19
450 DRAW 1,29,20 TO 30,20:DRAW 1,26,27
460 DRAW 1,27,18 TO 27,21 TO 26,23 TO 25,23 TO 25,27
470 DRAW 1,24,27 TO 23,27 TO 23,24 TO22,23 TO 22,21
480 DRAW 1,21,23 TO 17,23 TO 17,24 TO 16,25 TO 16,27 TO 17,27

```

**Alteration**—To make your own carnival animals, experiment with the graphic commands between lines 320 and 830. Or, use animals from other games, for example the dogs from *A Day At The Races*.

```

490 DRAW 1,15,27 TO 14,27 TO 14,22 TO 12
,20 TO 12,18 TO 14,16
500 DRAW 1,15,16 TO 23,16 TO 25,11
510 DRAW 1,12,13 TO 11,14 TO 11,16 TO 14
,16
520 PAINT 1,26,17:DRAW0,28,15
530 SSHAPE C$,11,10,34,31:SPRSAB C$,1
540 SCNCLR:REM DRAW OWL
550 CIRCLE 1,20,19,8:PAINT1,20,19
560 CIRCLE 0,16,17,2:CIRCLE0, 23,17,2
570 DRAW 0,18,19 TO 22,19 TO 20,22 TO 19
,18
580 DRAW 1,14,24 TO 16,28 TO 24,28 TO 26
,24
590 DRAW 1,14,28 TO 26,28
600 DRAW 1,14,24 TO 12,27:DRAW 1,26,24 T
O 28,27
610 DRAW 1,14,14 TO 12,12:DRAW 1,26,14 T
O 28,12
620 SSHAPE A$,11,10,34,31:SPRSAB A$,3
630 SCNCLR
640 REM BEE
650 BOX0,1,2,2,45,45
660 DRAW 1,11,19TO25,11 TO25,26 TO11,19
670 DRAW 1,13,17 TO13,20
680 DRAW 1,17,15 TO 17,22
690 DRAW 1,21,13 TO 21,24
700 DRAW 1,25,26 TO 31,22 TO 25,22
710 CIRCLE1,29,14,6:PAINT1,14,18
720 PAINT 1,21,22:DRAW1,27,13
730 DRAW1,31,13:DRAW1,29,17 TO 32,17
740 DRAW 1,34,13 TO 33,18
750 DRAW1,24,7 TO 27,10
760 DRAW1,34,7 TO 31,10
770 CIRCLE 1,20,14,3
780 SSHAPE D$,11,7,34,28:SPRSAB D$,4
790 GRAPHICO,1
800 SPRITE4,0,7:MOVSPR4,100,100
810 SPRITE 3,0,11:MOVSPR3,100,150
820 SPRITE2,0,4:MOVSPR2,240,100
830 SPRITE1,0,12:MOVSPR1,240,150
840 RETURN

```

**Alteration**—To double the size of each animal, add ,0,1,1 to the end of each **SPRITE** command in lines 800 to 830. For example, **800 SPRITE 4,0,7,0,1,1: etc.** If you do this, you should also change the **CHAR** statements in lines 130, 140, 170 and 180 to center the letters under the enlarged sprites. For example, **130 CHAR 1,8,7,"BEE": etc.**

# Translator

This program is an educational quiz. As is, the program is set up to act as a Spanish-language translator. The user picks the number of questions to be asked. An English word is shown and the user is asked to type in the Spanish equivalent.

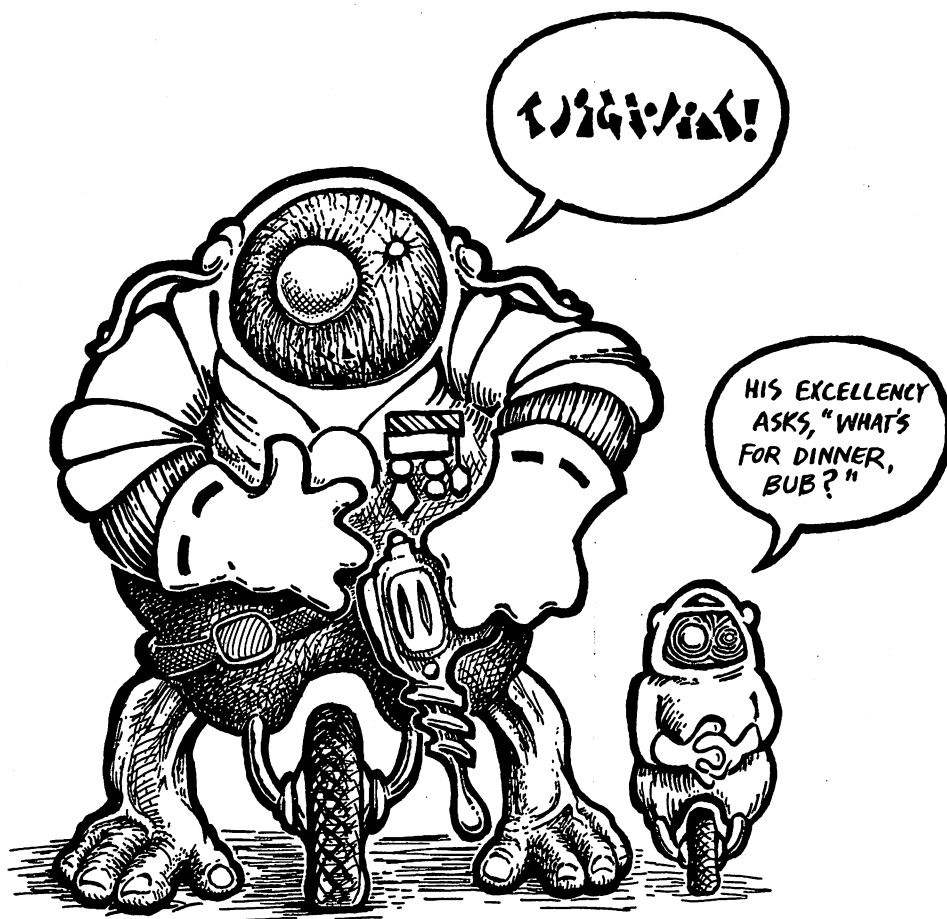
Correct and incorrect answers are indicated. When the answer is incorrect, the correct word is displayed. When all questions have been asked, the computer displays the user's score.

This game is written for the 80-column mode of the Commodore 128. It's easiest to enter the program into the computer if you first do the following:

1) Put the computer in the 80-column mode by depressing the 40/80 Display Button, setting your monitor to RGB mode, and then turning on the computer.

2) In the direct mode, type **PRINT CHR\$(14)** and press the RETURN key. This puts the computer in the upper-case/lower-case mode.

```
10 rem translator
20 print chr$(14)
30 dim e$(10), o$(10)
40 for x=1 to 10: read e$(x), o$(x): next
```



```

50 print"{CLR}"
60 print"Welcome to the Cybernetic school of computerized language."
70 print"I am Amanda, a spelling and translation program."
80 print"I will assist you in learning Spanish today."
90 input"{C/DN}What is your name";n$:print"{CLR}"
100 print"All right ";n$;", we shall begin by discussing the rules."
110 print"{C/DN}1) Whenever you are asked for an answer, please type one in."
120 print"{C/DN}2) Whenever you type a response, you must enter it by pressing RETURN."
130 print"{C/DN}3) I will tell you to give the correct Spanish for a word."
140 print"    Type in your answer and press RETURN."
150 print"    When the game is over I will say how well you did over all."
160 input"{C/DN}How many questions shall I ask you";q
170 s=0:forc=1toq:print"{CLR}Question #";c
180 x=int(rnd(1)*10)+1:print"Give the correct Spanish for: "e$(x)"{C/DN}":inputa$
190 ifa$=o$(x)thens=s+1:print"{C/DN}Correct":goto210
200 print"{C/DN}Incorrect.":print"The correct translation is: "o$(x)
210 print"{C/DN}Press RETURN for the next question."
220 getkeyq$:ifq$(<)chr$(13)then220
230 next
240 print"{CLR}"n$;", Out of"q"questions you got"s"right: that's";
250 printint(s*100/q+.5)"percent."
260 print"{C/DN}Would you like to play again (y/n)?"
270 getkeyq$:ifq$="y"thenrun:elseifq$(<)n"then270
280 print"{C/DN}Thanks for playing!"
290 datato do,hacer,to talk,hablar,to put,poner,to eat,comer
300 datadoor,puerta,mouth,boca,cow,vaca,fork,tenedor,spoon,cuchara,peace,paz

```

**Alteration**—Change the Spanish to any other language using the Latin alphabet. Change the vocabulary in the **DATA** statements of lines 290-300.

**Alteration**—Enlarge the computer's vocabulary by adding more **DATA** statements after line 300. Each English word must be followed by a comma and its foreign translation. You will also need to change lines 30 and 40 to accommodate the addition. For example, if you have 50 words, change the **DIM** statements in line 30 to **dim\$(50),o\$(50)**. Change the maximum value of **x** in line 40 to that same number of words: **for x=1 to 50**. It is possible to add several thousand words to a Commodore 128.

# Shell Game

In this game, the computer will place a ball under one of three boxes. Then it shuffles the boxes around the screen. Watch carefully because you're asked to find the box that has the ball.

**Alteration**—This program is a treat for the eyes. Make it a treat for the ears by adding lines of music near line 170. Carnival sounds might work well.

**Programming Note**—The blank part of line 180 is equal to 21 spaces.

```

100 REM SHELL GAME
105 COLOR4,6:COLOR0,16
110 GOSUB450
120 PRINT"{CLR}"TAB(15)"{RVON}SHELL GAME
    {RVOF}"
130 FORX=7TO9:FORY=1TO3:PRINTL$(X);S$(Y)
    :NEXTY,X
140 L=INT(RND(8)*3)+1
150 PRINTL$(L);B$
160 PRINT"{BLK}{HOME}{C/DN}{C/DN}HIT ANY
    KEY TO START"
170 GETKEYQ$
180 PRINT"{HOME}{C/DN}{C/DN}
    "

```



```

190 FORX=7TO9:FORY=1TO3:PRINTL$(X);E$(Y)
: NEXTY,X
200 FORX=1TO3:FORY=1TO3:PRINTL$(X);S$(Y)
: NEXTY,X
210 FORX=1TO3:W(X)=1:NEXTX:M=1
220 FORK=1TO9:C=0:IFW(K)=0THEN290
230 H=INT(RND(4)*4)+1:C=C+1:IFC>9THEN290
240 N=A(K,H):IFW(A(K,H))=1THEN230
250 W(K)=0:W(A(K,H))=1
260 FORY=1TO3:PRINTL$(K);E$(Y):NEXTY
270 FORY=1TO3:PRINTL$(A(K,H));S$(Y):NEXT
Y
280 IFL=KTHENL=A(K,H)
290 NEXTK:M=M+1
300 IFM<9THEN220
310 IFW(1)=1ANDW(2)=1ANDW(3)=1THEN330
320 GOTO220
330 FORX=1TO3:PRINTL$(X);"{RVON}";STR$(X)
):NEXTX
340 PRINT"{BLK}{HOME}{C/DN}{C/DN}OK, WHI
CH BOX IS THE BALL UNDER?"
350 GETKEYQ$:IFQ$<"1"ORQ$>"3"THEN350
360 Q=VAL(Q$)
370 IFQ=LTHENPRINT"YOU GOT IT!":GOTO390
380 PRINT"{C/DN}SORRY, IT WAS UNDER #\"L
390 FORX=1TO3:FORY=1TO3:PRINTL$(X);E$(Y)
: NEXTY,X
400 FORX=4TO6:FORY=1TO3:PRINTL$(X);S$(Y)
: NEXTY,X
410 PRINTL$(L);B$
420 PRINT"{C/DN}PLAY AGAIN (Y/N)?":GETKE
YQ$:IFQ$="Y"THEN120
440 END
450 PRINT"{CLR}{BLK}YOU ARE ABOUT TO PLA
Y {RVON}SHELL GAME{RVOF}."
470 PRINT"I WILL PLACE A BALL (●) UNDER
ONE OF"
480 PRINT"THREE RED BOXES AND THEN SHUFF
LE THE"
490 PRINT"BOXES AROUND."
500 PRINT"{C/DN}WATCH CAREFULLY AND THEN
TELL ME WHICH BOX THE BALL IS UNDER."
510 PRINT"{C/DN}HIT ANY KEY TO CONTINUE.
"
520 GETKEYQ$
530 S$(1)="{RED}{RVON} {RVOF}":E$(1)="
"
540 S$(2)="{C/DN}{RED}{RVON} {RVOF}":E
$(2)="{C/DN} "
550 S$(3)="{C/DN}{C/DN}{RED}{RVON} {RV
OF}":E$(3)="{C/DN}{C/DN} "

```

**Programming Note**—Make the graphic character in lines 470 and 560 by typing SHIFT-Q.

**Alteration**—If you are an advanced programmer, try replacing the red boxes (lines 530-550) with walnut shells by using **DRAW** statements and saving the shape to a string with the **SSHAPE** command. Place them on the screen with the **GSHAPE** command.

MORE →



```

560 B$="{BLUE}{C/DN}{C/RT}●"
570 L$(1)="{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
    {C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/
    DN}{C/DN}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{
    C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT
    }"
580 L$(2)=L$(1)+"{C/RT}{C/RT}{C/RT}{C/RT
    }{C/RT}{C/RT}"
590 L$(3)=L$(2)+"{C/RT}{C/RT}{C/RT}{C/RT
    }{C/RT}{C/RT}"
600 L$(4)=L$(1)+"{C/DN}{C/DN}{C/DN}{C/DN
    }{C/DN}{C/DN}"
610 L$(5)=L$(2)+"{C/DN}{C/DN}{C/DN}{C/DN
    }{C/DN}{C/DN}"
620 L$(6)=L$(3)+"{C/DN}{C/DN}{C/DN}{C/DN
    }{C/DN}{C/DN}"
630 L$(7)=L$(1)+"{C/UP}{C/UP}{C/UP}{C/UP
    }{C/UP}{C/UP}"
640 L$(8)=L$(2)+"{C/UP}{C/UP}{C/UP}{C/UP
    }{C/UP}{C/UP}"
650 L$(9)=L$(3)+"{C/UP}{C/UP}{C/UP}{C/UP
    }{C/UP}{C/UP}"
660 FORX=1TO9:FORY=1TO4:READA(X,Y):NEXTY
    ,X
670 RETURN
680 DATA2,4,7,1,1,3,5,8,2,6,9,3
690 DATA1,4,5,4,4,2,6,5,5,3,6,6
700 DATA1,7,8,7,7,2,9,8,8,9,3,9
    
```

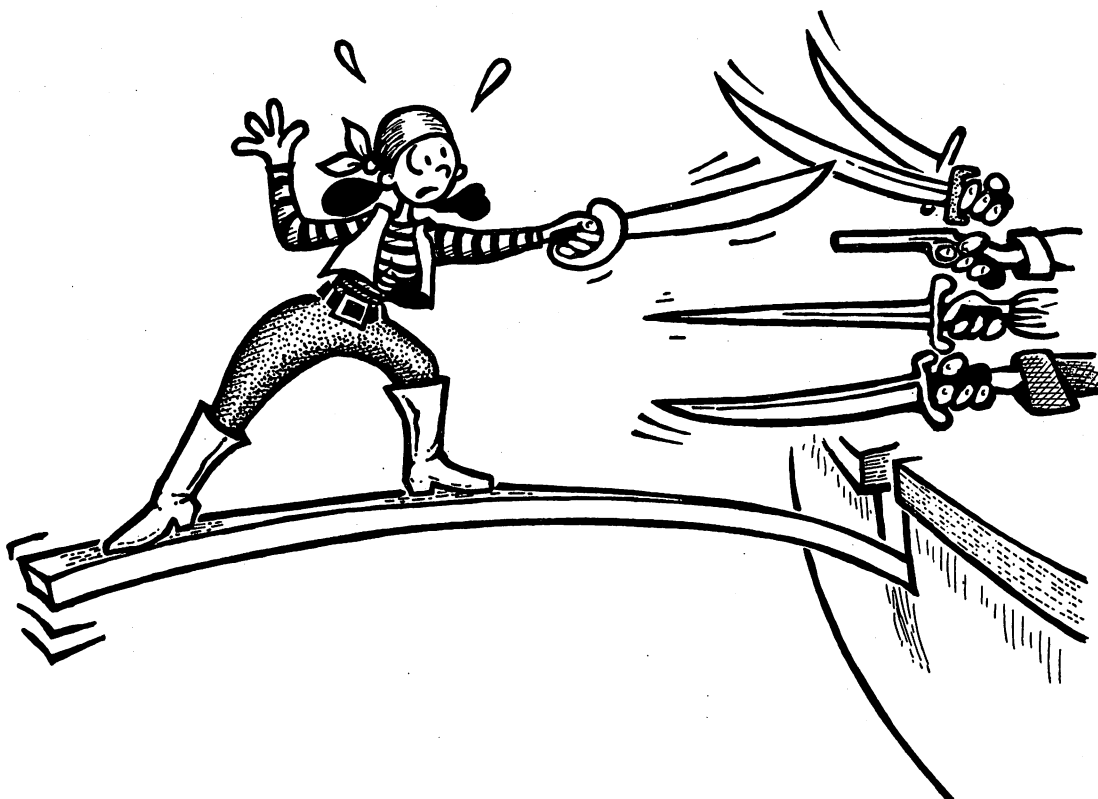
# Pirates

Batten down your hatches and head for the high seas. Can you recover the gold stolen by the pirate Redbeard? You must search for five pirate ships hidden in the waters displayed on the screen. When you find a pirate ship, you can either fire on it or board it. In the ensuing battle you may lose men and cannons.

The game ends after three minutes or after you or all five pirate ships are sunk. The galleons are the nicest sprites used in these 35 games.

```
10 REM PIRATES
20 GOSUB880
30 PRINT"{CLR}{BLUE}AHOY THERE MATEY. AN
D WHAT WOULD BE"
40 INPUT"YOUR NAME NOW";N$
50 PRINT"{C/DN}WELL, WELL, CAPTAIN "N$"
IT IS..."
60 PRINT"AND I BE CAPTAIN REDBEARD."
70 PRINT"{C/DN}I'VE A FLEET OF 5 GALLEON
S HIDDEN IN"
```

MORE →



```

80 PRINT"THESE WATERS. CATCH ME IF YOU C
AN."
90 PRINT"{C/DN}YOUR SHIP IS WHITE AND MY
SHIPS (WHEN"
100 PRINT"YOU FIND 'EM) ARE AS RED AS MY
BEARD."
110 PRINT"{C/DN}YOUR SHIP HAS A CREW OF
200 MEN AND 100"
120 PRINT"CANNON ROUNDS.":PRINT"{C/DN}HI
T ANY KEY"
130 GETKEYQ$
140 PRINT"{CLR}{C/DN}YOU'LL NAVIGATE WIT
H THE CURSOR KEYS."
150 PRINT"HIT F TO FIRE CANNONS AND B TO
BOARD."
160 PRINT"{C/DN}IF YOU TRY TO BOARD OR F
IRE UPON A"
170 PRINT"SHIP THAT'S OUT OF RANGE YOUR
GUNNER"
180 PRINT"WILL TELL YOU ABOUT IT. TO BOA
RD A"
190 PRINT"SHIP YOU MUST BE VERY CLOSE."
200 PRINT"{C/DN}YOU HAVE 3 MINUTES TO FI
ND MY SHIPS"
210 PRINT"OR I'LL FIND YOU!"
220 PRINT"{C/DN}HIT ANY KEY TO START."
230 GETKEYQ$:PRINT"{CLR}"
240 FORX=0TO39:CHAR1,X,0," ",1:NEXT
250 FORX=1TO25:POKE(RND(1)*1000+1024),10
2:NEXT
260 MOVSPR1,40,50:SPRITE1,1
270 FORX=2TO6
280 PX(X)=INT(RND(1)*297+24):PY(X)=INT(R
ND(1)*180+50)
290 MOVSPRX,PX(X),PY(X):NEXT
300 K$="{C/UP}{C/RT}{C/DN}{C/LF}BF":A=10
0:M=200
310 FORX=2TO6:D(X)=10:NEXT
320 CHAR1,1,0,"MEN 200",1
330 CHAR1,10,0,"AMMO 100",1
340 CHAR1,20,0,"GOLD 000",1
350 TI$="000000":TL=300
360 REM START LOOP
370 CHAR1,30,0,"TIME "+MID$(TI$,4,1)+": "
+RIGHT$(TI$,2),1
380 GETQ$:ON INSTR(K$,Q$)+1 GOTO370,390,
400,410,420,440,530
390 MOVSPR1,+0,-2:GOTO640
400 MOVSPR1,+2,+0:GOTO640
410 MOVSPR1,+0,+2:GOTO640
420 MOVSPR1,-2,+0:GOTO640
430 REM BOARD SHIP

```

**Alteration**—To use the numeric keypad to change direction, change line 300 to **300 K\$ = ",8624":X=RND(0)**. This turns on the numeric keypad so 8,6,2 and 4 control up, right, down and left respectively.

**Alteration**—Change the amount of ammunition and men by changing the value of **A** and **M** in line 300.

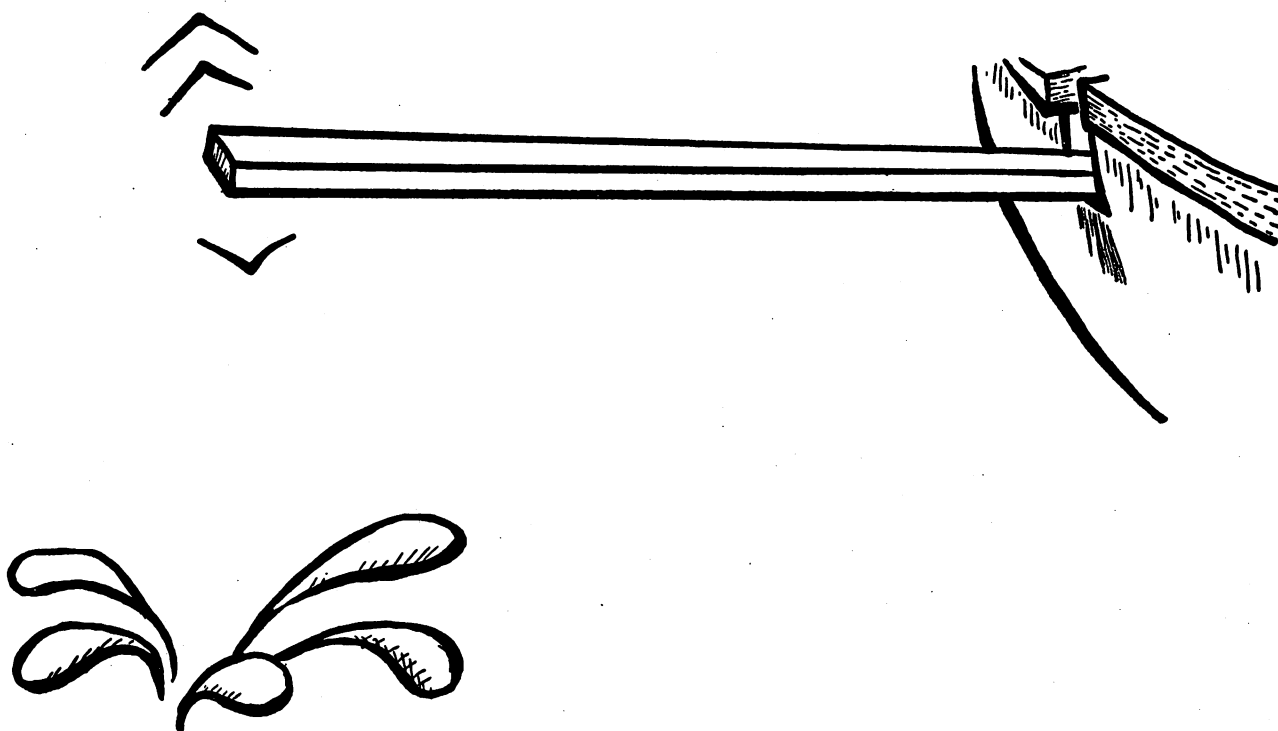
**Alteration**—Change the speed of your ship by changing the values of **2** in lines 390-420. Don't change the plus or minus signs.

```

440 R=5:GOSUB720
450 IFF=0THENM$="NO SHIPS IN RANGE, CAPT
AIN.":GOSUB760:GOTO640
460 FORX=2TO6:IFR(X)=1THENSOUND1,25000,1
00,0,20000,150,0
470 IFR(X)=1THENM=M-INT(RND(1)*70):SPRIT
EX,0:MOVSPRX,0,0:X=6
480 NEXT:IFM<=0THENM$="THERE WERE TOO MA
NY.. THEY CAPTURED US.":GOTO800
490 G=G+INT(RND(1)*100+100):CHAR1,24,0,S
TR$(G)+" ",1:CHAR1,4,0,STR$(M)+" ",1
500 P=P+1:M$="PIRATE SHIP CAPTURED.":GOS
UB760
510 GOTO640
520 REM FIRE CANNONS
530 R=30:GOSUB720
540 IFF=0THENM$="NO SHIPS IN RANGE, SIR.
":GOSUB760:GOTO640
550 IFA<=0THENM$="WE'RE OUT OF AMMO, CAP
TAIN.":GOSUB760:GOTO640
560 FORX=2TO6:IFR(X)=1THENSOUND1,1400,40
,1,1200,5,3:A=A-INT(RND(1)*10)
570 IFA<0THENA=0
580 IFR(X)=1THEND(X)=D(X)-INT(RND(1)*6):
CHAR1,14,0,STR$(A)+" ",1
590 NEXT:FORX=2TO6:IFD(X)<=0THENSPRITEX,
0:MOVSPRX,0,0

```

MORE →



**Alteration**—Line 650 tests to see if your time is up. To give yourself 4 minutes to play the game, change the first statement to **IF VAL(TI\$)>=400** etc.

**Alteration**—Lines 710-740 provide a routine to check the range of pirate ships. Variable **R** in lines 440, 530 and 660 does this. Change the values of **R** to change allowable ranges.

**Programming Tip**—The subroutine in lines 750-780 centers a message, variable **M\$**, on the screen regardless of length.

```

600 IFD(X)<=0THENM$="PIRATE SHIP SUNK!":
D(X)=1:P=P+1:GOSUB760
610 NEXT
620 IFA=0THENM$="WE COULDN'T RETURN FIRE
...WE'RE SUNK!":GOTO800
630 IFRND(1)<.03THENM$="WE'VE BEEN HIT S
IR! SHE'S GOIN' DOWN!":GOTO800
640 IFP=5THENM$="YOU WON!! THE QUEEN SEN
DS HER THANKS.":GOTO800
650 IFVAL(TI$)>=300THENM$="TIME'S UP MAT
EY... THE SEA IS MINE!":GOTO800
660 R=40:GOSUB720
670 IFF=0THEN370
680 FORX=2TO6:IFR(X)=1THENSPRITEX,1
690 NEXT:GOTO370
700 REM SUBROUTINES
710 REM CHECK RANGE
720 F=0:FORX=2TO6:R(X)=0
730 IFABS(RSPPOS(1,0)-RSPPOS(X,0))<RTHEN
IFABS(RSPPOS(1,1)-RSPPOS(X,1))<(R*.77)TH
ENR(X)=1:F=1
740 NEXT:RETURN
750 REM PRINT MSG
760 CHAR1,20.5-(LEN(M$)/2),1,M$:SLEEP2
770 FORX=0TO38:CHAR1,X,1," ":NEXT
780 RETURN
790 REM END OF GAME
800 FORX=1TO6:SPRITEX,0:NEXT
810 PRINT"{CLR}":CHAR1,20.5-(LEN(M$)/2),
1,M$
820 PRINT:PRINT"{C/DN}{C/DN}YOU GOT"G"GO
LD PIECES"
830 PRINT"AND"P"PIRATES."
840 PRINT"{C/DN}{C/DN}{C/DN}PLAY AGAIN (
Y/N)?"
850 GETKEYQ$:IFQ$="Y"THENRUN:ELSEIFQ$<>"
N"THEN850
860 END
870 REM DRAW SHIP SPRITE
880 COLOR1,2:COLOR4,13:COLOR0,4:GRAPHIC1
,1
890 BOX1,0,14,7,15
900 DRAW1,2,16 TO 18,16
910 DRAW1,14,15 TO 18,15
920 DRAW1,15,4TO15,14TO23,14TO15,6
930 DRAW1,16,11 TO 21,12
940 PAINT1,17,10
950 DRAW1,16,4TO16,5TO18,5TO19,6
960 DRAW1,18,16TO15,19TO3,19TO3,17
970 PAINT1,10,17
980 DRAW1,12,2TO9,1TO9,0TO9,15

```

---

```
990 DRAW1,13,14TO8,10TO8,6TO10,6TO10,11T  
011,11TO11,7  
1000 DRAW1,7,4 TO 4,3 TO 4,13  
1010 DRAW1,7,13 TO 6,12  
1020 BOX1,3,6,5,11  
1030 SSHAPE A$,0,0,23,21  
1040 FORX=1TO6:SPRSAY A$,X:NEXT  
1050 SPRITE1,0,2  
1060 FORX=2TO6:SPRITE1,0,10:NEXT  
1070 GRAPHIC0,1:RETURN
```

# Master Code

This short program is based on a popular board game. The computer invites you to break a secret code. When the four squares appear on the screen, you enter one number of code at a time. The number is between 1 and 5. A number *may* be repeated.

A correct answer is indicated by an asterisk in that square. You have four tries to break the code. You win when you guess all four numbers in the code.

**Alteration**—Change the second number in the **COLOR** statements of line 30 to change the color of the background (**COLOR 0**) and the border (**COLOR 4**). Use values from 1 to 16.

```
10 REM MASTER CODE
20 M$="{HOME}{C/DN}{C/DN}{C/DN}{C/DN}":L
  $=M$+"{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/D
  N}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C
  /RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}
  {C/RT}{C/RT}{C/RT}{C/RT}{C/RT}{C/RT}"
30 COLOR4,6:COLOR0,2:PRINT"{CLR}{BLK}"TA
  B(14)"MASTER CODE"
40 PRINT"{C/DN}{C/DN}I AM LILY MAZET, A
  CYBERNETIC CODE"
50 PRINT"GENERATING PROGRAM. YOU ARE ABO
  UT TO"
60 PRINT"ATTEMPT TO BREAK MY CODE."
70 PRINT"{C/DN}I WILL GENERATE FOUR SQUA
  RES. EACH"
```



**Alteration**—Make the game more difficult by changing the 5 in lines 130-160 to a larger number. This increases the range of numbers that the computer can use in its code. Be sure to change the **PRINT** statement in line 80 to reflect the new range.

**Programming Note**—Make the graphic character in lines 180 and 190 by typing **COMMODORE-+**.

**Alteration**—Make the game easier by increasing the number of guesses the user gets. For example, changing **X** in the first part of line 200 to **FOR X=1 TO 5** etc. allows the user five tries. Then change the **PRINT** statement in line 90 to tell the user how many tries he gets.

```

80 PRINT "SQUARE WILL REPRESENT ONE NUMBER: " : PRINT "1, 2, 3, 4, OR 5."
90 PRINT "{C/DN} YOU WILL HAVE FOUR TRIES TO OBTAIN THE " : PRINT "CORRECT SEQUENCE."
100 PRINT "{C/DN} NUMBERS MAY BE USED MORE THAN ONCE." : PRINT "{C/DN} HIT ANY KEY TO START."
110 GETKEYQ$
120 PRINT "{CLR}" TAB(14) "MASTER CODE"
130 E=INT(RND(8)*5)+1
140 B=INT(RND(8)*5)+1
150 C=INT(RND(8)*5)+1
160 D=INT(RND(8)*5)+1
170 PRINT TAB(13) "{C/DN} {C/DN} A B C
    D"
180 PRINT TAB(13) "{RVON} {RVOF} █ {RVON} {RVOF} {RVON} {RVOF}"
190 PRINT TAB(13) "{RVON} {RVOF} █ {RVON} {RVOF} {RVON} {RVOF}"
200 FOR X=1 TO 4 : PRINTL$ "{C/UP} {C/UP}" X
210 IF W=ETHEN 240
220 PRINTL$ ; : INPUT "A {C/LF} {C/LF} {C/LF} {C/LF}" ; W
230 IF W=ETHEN PRINTM$ ; TAB(13) "{RVON} ** {RVON} {RVOF}" : PRINT TAB(13) "{RVON} ** {RVOF}"
240 IF V=BTHEN 270
250 PRINTL$ ; : INPUT "B {C/LF} {C/LF} {C/LF} {C/LF}" ; V
260 IF V=BTHEN PRINTM$ ; TAB(17) "{RVON} ** {RVON} {RVOF}" : PRINT TAB(17) "{RVON} ** {RVOF}"
270 IF Y=CTHEN 300
280 PRINTL$ ; : INPUT "C {C/LF} {C/LF} {C/LF} {C/LF}" ; Y
290 IF Y=CTHEN PRINTM$ ; TAB(21) "{RVON} ** {RVON} {RVOF}" : PRINT TAB(21) "{RVON} ** {RVOF}"
300 IF Z=DTHEN 330
310 PRINTL$ ; : INPUT "D {C/LF} {C/LF} {C/LF} {C/LF}" ; Z
320 IF Z=DTHEN PRINTM$ ; TAB(25) "{RVON} ** {RVON} {RVOF}" : PRINT TAB(25) "{RVON} ** {RVOF}"
330 IF W=E AND V=B AND Y=C AND Z=D THEN 400
340 NEXT X
350 PRINT CHR$(27) "@ {C/DN} {C/DN}" TAB(6) "YOU DID NOT BREAK THE CODE."
360 PRINT "{C/DN}" TAB(8) "IT WAS: " E ; B ; C ; D
370 PRINT "{C/DN}" TAB(7) "HIT ANY KEY TO PLAY AGAIN."
380 PRINT TAB(13) "<STOP> TO QUIT"
390 GETKEYQ$ : RUN
400 PRINT "{C/DN} YOU BROKE THE CODE IN " X " TRIES!!!"
410 GOTO 370

```

# A Day At The Races

You've gone to the dogs—the dog track that is. You and the computer can choose among four dogs racing toward the finish line.

The program is complete with user-friendly features such as music, an introduction, a racing program, fun graphics and easy restart. It works great as is, but it's also fun to personalize.

This is a fun game for up to nine players. The computer keeps track of your wins and losses.

**Alteration**—Change the names and descriptions of the dogs in lines 20 and 1090-1270 to match the names and characteristics of dogs you know and love.

```
10 REM A DAY AT THE RACES
20 D$(1)="MOLLY":D$(2)="FELICE":D$(3)="B
AD DOG":D$(4)="BILLY"
30 O(1)=2:O(2)=10:O(3)=4:O(4)=7
40 P(1)=.4:P(2)=.43:P(3)=.41:P(4)=.42
50 COLOR0,12:COLOR4,12
60 FORX=1TO9:M(X)=500:NEXT
70 PRINT"{CLR}{WHT}WELCOME TO UNCLE LOUI
S' DOGTRACK, BEST":PRINT"DOGTRACK IN ARI
ZONA."
80 PRINT"{C/DN}I HOPE YOU'RE FEELING LUC
KY TODAY."
90 PRINT"I HAVE SOME OF THE FINEST PUPS
IN THE"
100 PRINT"MICROCHIP WORLD JUST READY TO
RUN THEIR":PRINT"PAWS OFF."
110 PRINT"{C/DN}HOW MANY PLAYERS TODAY (
UP TO 9)? ";
120 GETKEYQ$:IFQ$<"1"ORQ$>"9"THEN120
130 PRINTQ$:PRINT"{C/DN}GLAD TO HAVE YOU
, YOU CAN CALL ME LOUIS.":P=VAL(Q$)
140 FORX=1TOP:PRINT"{C/DN}WHAT IS PLAYER
"X"{C/LF}'S NAME";:INPUTN$(X):NEXT
150 PRINT"{C/DN}WOULD YOU LIKE TO SEE A
PROGRAM (Y/N)?"
160 GETKEYQ$:IFQ$="Y"THENGOSUB1090:ELSEI
FQ$<>"N"THEN160
170 PRINT"{CLR}PLACE YOUR BETS BY SELECT
ING NUMBER.{C/DN}"
180 FORX=1TO4:PRINTX"{C/LF}) "D$(X);TAB(
13);O(X)"TO 1":NEXT
190 FORX=1TOP:B(X)=0:NEXT:FORX=1TOP
200 IFM(X)<1THENPRINT"{C/DN}PLAYER"X"IS
BROKE.":GOTO260
210 PRINT"{C/DN}PLAYER"X:PRINTN$(X)", ";
220 INPUT"WHICH DOG";S(X):IFS(X)>4ORS(X)
<1THEN220
230 PRINT"YOU HAVE $"M(X);TAB(19);
240 INPUT"YOUR BET";B(X)
250 IFB(X)>M(X)THENPRINT"SORRY YOU DO NO
T HAVE CREDIT":GOTO230
260 NEXT
```

**Alteration**—Change the sound of the starting pistol by changing the values of the numbers in the **SOUND** statement of line 330. To simply increase the volume, add this line: **315 VOLUME 8**

**Alteration**—Change the color of the dogs by changing the value of the third number in any **SPRITE** setup line, lines 360, 380, 400 and 420. For example, **360 SPRITE 1,1,7,0:REM SET UP SPRITE 1** replaces a 12 with a 7. This changes the color of Sprite 1 to blue instead of dark gray.

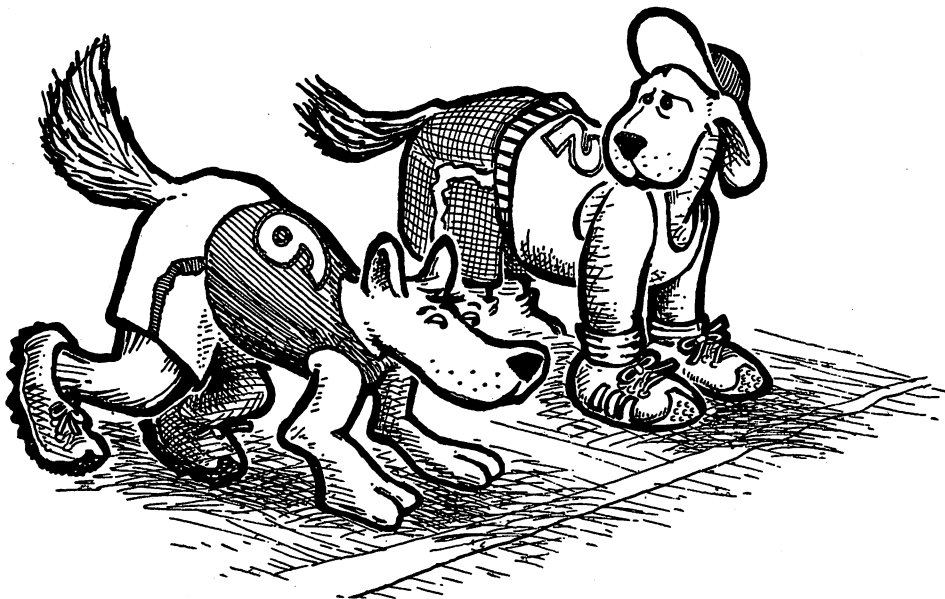
**Alteration**—You can change the speed of the dogs by increasing the second number in the **SPRITE** commands of lines 440-470. For example, change +2 to +4. If the number is too big, the dogs will seem to jump toward the finish line.

```

270 PRINT "{C/DN}ALL BETS ARE IN...":PRINT
T"HIT ANY KEY TO START THE RACE.":GETKEY
Q$
280 IFZ=0THENZ=1:GOSUB780:GOSUB660
290 COLOR0,6:GRAPHIC1:TEMPO 12
300 PLAY "V104T8U8X0"
310 PLAY "V103QG V104QGS GSGSGS#FS#FS#FSFS
FSGWE"
320 PLAY "V104SES#FQGSES#FQGSES#FQGGQGG"
330 SLEEP3:SOUND1,4500,5,0,4500,0,3
340 REM START RACE
350 MOVSPR 1,20,95:REM POSITION SPRITE 1
360 SPRITE 1,1,12,0:REM SET UP SPRITE 1
370 MOVSPR 2,20,111:REM POSITION SPRITE
2
380 SPRITE 2,1,10,0:REM SET SPRITE 2
390 MOVSPR 3,20,127:REM POSITON SPRITE 3
400 SPRITE 3,1,3,0:REM SET UP SPRITE 3
410 MOVSPR 4,20,143:REM POSITON SPRITE 4
420 SPRITE 4,1,7,0:REM SET SPRITE 4
430 REM MOVE DOGS
440 IFRND(1)>P(1)THENMOVSPR1,+2,+0:IFRSP
POS(1,0)>312THENW=1:GOTO500
450 IFRND(1)>P(2)THENMOVSPR2,+2,+0:IFRSP
POS(2,0)>312THENW=2:GOTO500
460 IFRND(1)>P(3)THENMOVSPR3,+2,+0:IFRSP
POS(3,0)>312THENW=3:GOTO500
470 IFRND(1)>P(4)THENMOVSPR4,+2,+0:IFRSP
POS(4,0)>312THENW=4:GOTO500
480 GOTO440
490 REM DECLARE WINNER
500 SLEEP3:COLOR0,12

```

MORE →



```

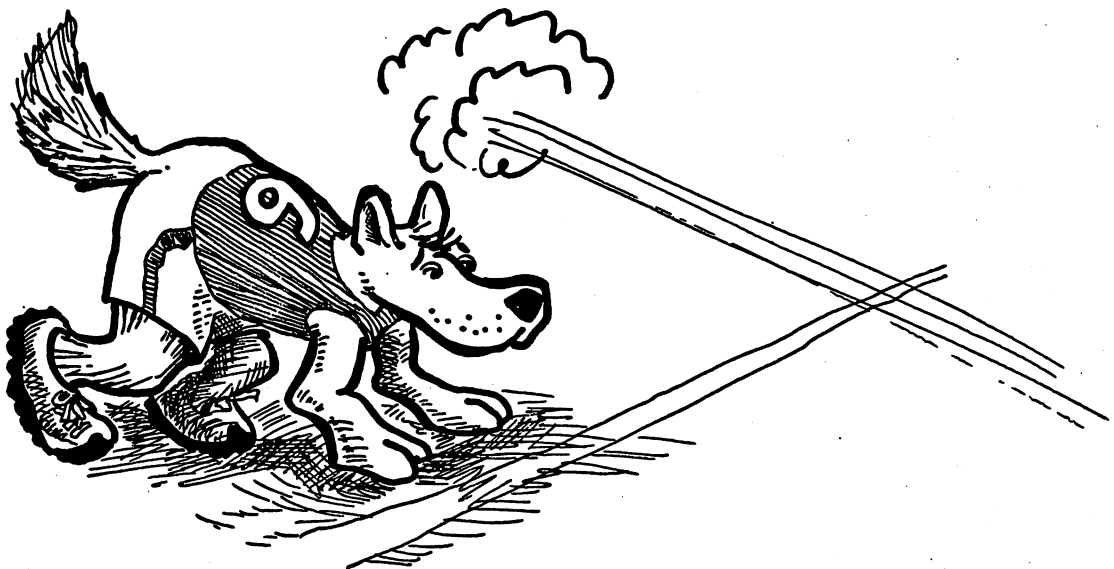
510 FORX=1TO4:SPRITE X,0:NEXT:GRAPHICO
520 PRINT"{CLR}{C/DN}{RVON}WE HAVE A WIN
NER!"
530 PRINT"{C/DN}#"W"- "D$(W)" PAYS OFF A
T"O(W)"TO 1."
540 FORX=1TOP:PRINT"{C/DN}"X"{C/LF}) "N$(
X);
550 IFS(X)=WTHENPRINT" WINS $"B(X)*(O(W)
-1)"!":M(X)=M(X)+B(X)*(O(W)-1):GOTO 570
560 PRINT" LOST $"B(X)"ON THAT ONE.":M(X)
)=M(X)-B(X)
570 NEXT
580 X=0:FORY=1TOP:IFM(Y)>0THENX=1
590 NEXT:IFX=0THENPRINT"{C/DN}EVERYONE'S
BROKE!"
600 IFX=0THENPRINT"{C/DN}YOU'VE PAID FOR
MY VACATION.":PRINT"{C/DN}[RUN] TO REST
ART.":END
610 PRINT"{C/DN}ANOTHER RACE (Y/N)?"
620 GETKEYQ$:IFQ$="Y"THEN150
630 IFQ$<>"N"THEN620
640 PRINT"{CLR}":FORX=1TOP:PRINT"{C/DN}"
X"{C/LF}) "N$(X)" IS LEFT WITH $"M(X):NE
XT:END
650 REM DRAW RACE TRACK
660 COLOR0,6:COLOR4,12:COLOR1,1:SCNCLR
670 FORX=48TO112STEP16:DRAW1,0,XTO319,X:
NEXT
680 BOX1,100,6,219,24,0,1
690 CHAR1,14,1,"UNCLE LOUIS'",1
700 CHAR1,16,2,"DOGTRACK",1
710 F$="■FINISH■":FORX=1TO8:CHAR1,39,5+X
,MID$(F$,X,1),1:NEXT
720 FORX=1TO4:CHAR1,0,2*X+5,MID$(STR$(X)
,2):NEXT
730 FORX=0TO319STEP9:BOX1,X,120,X,170,45
740 BOX1,X,120,X,170,135:NEXT
750 FORX=1TO319STEP31.4:BOX1,X,120,X+3,1
65,0,1:NEXT
760 RETURN
770 REM DRAW DOGS SUBROUTINE
780 GRAPHIC1:COLOR0,1:COLOR1,1
790 SCNCLR:REM DRAW DOGS 2,4
800 DRAW 1,25,11 TO 28,14 TO 30,14 TO 31
,15 TO 33,15
810 DRAW 1,32,15 TO 32,17 TO 31,18 TO 29
,18 TO 28,19
820 DRAW 1,29,20 TO 30,20:DRAW 1,26,27
830 DRAW 1,27,18 TO 27,21 TO 26,23 TO 25
,23 TO 25,27

```

**Programming Note**—Make the graphic character in line 710 by typing COMMODORE-+.

```
840 DRAW 1,24,27 TO 23,27 TO 23,24 TO22,  
23 TO 22,21  
850 DRAW 1,21,23 TO 17,23 TO 17,24 TO 16  
,25 TO 16,27 TO 17,27  
860 DRAW 1,15,27 TO 14,27 TO 14,22 TO 12  
,20 TO 12,18 TO 14,16  
870 DRAW 1,15,16 TO 18,16 TO 19,15 TO 22  
,15 TO 25,11  
880 DRAW 1,11,16 TO 12,15 TO 13,15  
890 PAINT 1,26,16  
900 DRAW 0,26,15  
910 SSHAPE B#,11,10,34,31  
920 SPRSAV B#,2:SPRSAV B#,4  
930 SCNCLR:REM DRAW DOG 1,3  
940 DRAW 1,25,11 TO 29,15 TO 33,15  
950 DRAW 1,32,15 TO 32,17 TO 31,18 TO 29  
,18 TO 28,19  
960 DRAW 1,29,20 TO 30,20:DRAW 1,26,27  
970 DRAW 1,27,18 TO 27,21 TO 26,23 TO 25  
,23 TO 25,27  
980 DRAW 1,24,27 TO 23,27 TO 23,24 TO22,  
23 TO 22,21  
990 DRAW 1,21,23 TO 17,23 TO 17,24 TO 16  
,25 TO 16,27 TO 17,27  
1000 DRAW 1,15,27 TO 14,27 TO 14,22 TO 1  
2,20 TO 12,18 TO 14,16  
1010 DRAW 1,15,16 TO 23,16 TO 25,11  
1020 DRAW 1,12,13 TO 11,14 TO 11,16 TO 1  
4,16
```

MORE →



```
1030 PAINT 1,26,17
1040 DRAW 0,28,15
1050 SSHAPE C$,11,10,34,31
1060 SPRSAV C$,1:SPRSAV C$,3:SCNCLR
1070 RETURN
1080 REM PRINT PROGRAM
1090 PRINT"{CLR}1) {RVON}MOLLY{RVOF}: HU
SKY MIXED BREED CAN REALLY"
1100 PRINT"    HAUL...HAS WON 16 OUT OF 2
4"
1110 PRINT"    PROFESSIONAL RACES. THIS 7
YEAR OLD"
1120 PRINT"    HAS EXPERIENCE, CONFIDENCE
AND CLASS.";
1130 PRINT"    A SURE BET IF SHE DOESN'T
STOP ALONG"
1140 PRINT"    THE TRACK FOR A SNACK.":PR
INT"    ODDS: 2-1"
1150 PRINT"{C/DN}2) {RVON}FELICE{RVOF}:
THIS 8 YEAR OLD SHAGGY HAS"
1160 PRINT"    BEEN KNOWN TO FALL ASLEEP
IN THE"
1170 PRINT"    MIDDLE OF THE TRACK. BUT W
ATCH OUT."
1180 PRINT"    THIS SLEEPER IS FULL OF SU
RPRISES.":PRINT"    ODDS: 10-1"
1190 PRINT"{C/DN}{C/DN}{C/DN}HIT ANY KEY
FOR NEXT PAGE":GETKEYQ$
1200 PRINT"{CLR}3) {RVON}BAD DOG{RVOF}:
THIS GUY CAN RUN..."
1210 PRINT"    UNFORTUNATELY, HE HAS BEEN
KNOWN TO"
1220 PRINT"    THROW A FEW RACES...HIS LI
CENSE IS"
1230 PRINT"    ON PROBATION.":PRINT"    OD
DS: 4-1"
1240 PRINT"{C/DN}4) {RVON}BILLY{RVOF} TH
IS PUP HAS SPEED, PEP, AND"
1250 PRINT"    VITALITY...IF HE RUNS IN T
HE RIGHT"
1260 PRINT"    DIRECTION. HE IS A REAL TH
REAT."
1270 PRINT"    FIRST PROFESSIONAL RACE.":
PRINT"    ODDS: 7-1"
1280 PRINT"{C/DN}{C/DN}HIT ANY KEY TO PL
ACE YOUR BET.":GETKEYQ$:RETURN
```

# Lost Dutchman Mine

Here's a game based on an Arizona folk tale about the disappearance of a Dutch prospector in the Superstition Mountains. The game is an adventure maze with more than one screen display. You move through the first maze picking up gold pieces (•) and searching for clues (?) to the hidden treasure of the mine. But you're constantly being chased by ghosts of lost prospectors. The game ends if one catches you.

When you touch the correct clue, you've found the secret treasure stash. You then find yourself in a new room. The treasure is in clear sight, but it's protected by the Dutchman's ghost. If you reach the treasure, you receive 10 times the amount of gold collected in the first maze.

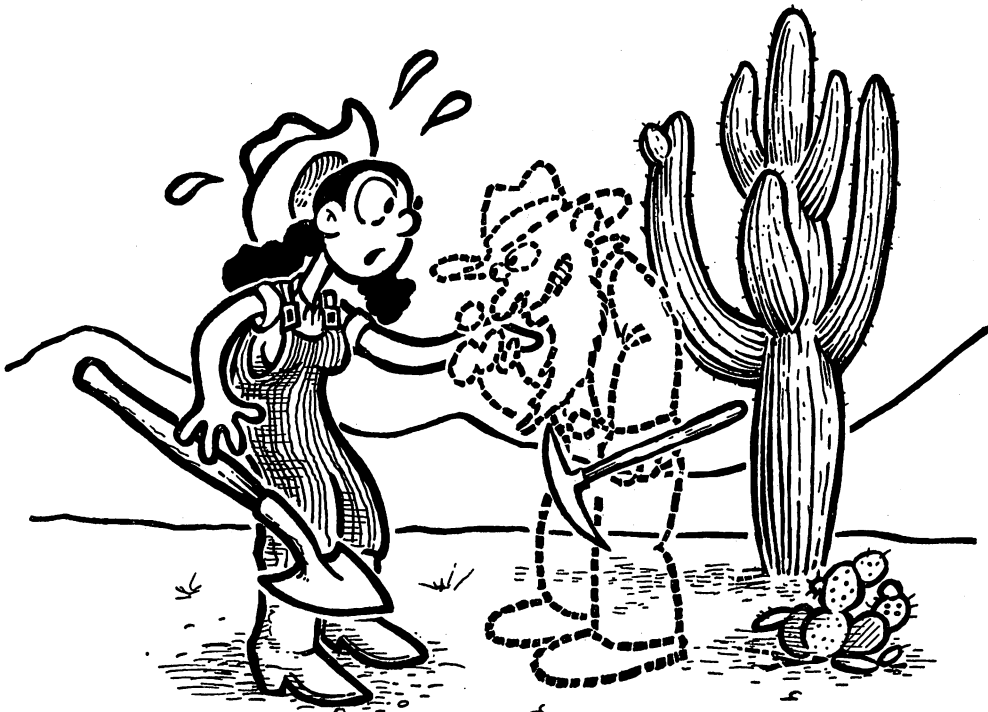
**Alteration**—For Western music, add the music from *Hangman* to this program before line 20.

```

10 REM LOST DUTCHMAN MINE
20 X=RND(0):WL=160:BL=32:N=50:GOSUB560
30 SR=0:GL=2020:DV=40:DH=1:K$="{C/UP}{C/
RT}{C/DN}{C/LF}"
40 REM START LOOP
50 CHAR1,14,0,"SCORE:"+STR$(SR)
60 D=0:IFVTHEN80
70 ONJOY(2)+1GOTO 210,90,210,100,210,110
,210,120,210
80 GETQ$:ON INSTR(K$,Q$,1)+1 GOTO210,90,
100,110,120
90 D=-DV:GOTO130
100 D=DH:GOTO130
110 D=DV:GOTO130
120 D=-DH:GOTO130

```

MORE →



**Alteration**—To change the value of a piece of gold to 5, change the number 1 to 5 in line 170.

```

130 SOUND1,3000,1,0,0,0,3:POKE208,0
140 IFPEEK(L+D)=BLTHEN 210
150 IFPEEK(L+D)=WLTHEN 230
160 IFPEEK(L+D)=GTHEN350
170 IFPEEK(L+D)=GPTHENSR=SR+1:GOTO 210
180 IFPEEK(L+D)=CLTHENSR=SR+100:CHAR1,0,
0,"FIND ROOM":SLEEP1:CHAR1,0,0,"
"
190 IFL+D=RLTHEN410
200 IFL+D=GLTHEN500
210 POKEL,BL:L=L+D:POKEL,I
220 LY=INT((L-S)/DV):LX=L-S-LY*DV
230 D=0:NG=3:IFRL=2020THENNG=1
240 FORX=1TONG:POKEG(X),BL
250 GY=INT((G(X)-S)/DV):GX=G(X)-S-GY*DV
260 IFGX<LXTHENIFPEEK(G(X)+DH)<N THEND=D
H:GOTO280
270 IFGX>LXTHENIFPEEK(G(X)-DH)<N THEND=-
DH
280 IFGY>LYTHENIFPEEK(G(X)+D-DV)<N THEND
=D-DV:GOTO300
290 IFGY<LYTHENIFPEEK(G(X)+D+DV)<N THEND
=D+DV
300 IFPEEK(G(X)+D)=ITHEN350
310 G(X)=G(X)+D:POKEG(X),G:IFG=65THENG=8
8:GOTO330
320 IFG=88THENG=65
330 NEXTX:SOUND1,40000,1:GOTO50
340 REM CAUGHT
350 COLOR4,3:SOUND2,20000,300,2,10000,10
0
360 SLEEP4:COLOR4,15:PRINT"{CLR}{C/DN}{C
/DN}YOU LOSE!!!"
370 PRINT"MY GHOST GOT YOU!"
380 PRINT"{C/DN}HA HA HA HA HA!"
390 GOTO530
400 REM SECRET ROOM
410 PRINT"{CLR}":FORX=1TO19:POKE1064+X,1
60:POKE1544+X,160:NEXT
420 FORX=1065TO1525STEP40:POKEX,160:POKE
X+18,160:NEXT
430 S=1106:B=160:BX=49
440 FORX=0TOBX:POKES+40*INT(RND(1)*12)+I
NT(RND(1)*17),B:NEXTX
450 GL=S+40*INT(RND(1)*12)+INT(RND(1)*17
):POKEGL,164
460 G=88:FORX=1TO3:G(X)=1513:NEXTX:L=S+8
470 FORX=1TO3:POKEG(X),G:NEXTX:POKEL,I
480 RL=2020
490 SLEEP1:GOTO50
500 SLEEP1

```

```

510 PRINT "{CLR}{C/DN}{C/DN}"TAB(11)"YOU
FOUND THE GOLD!"
520 PRINTTAB(11)"{C/DN}{C/DN}FINAL SCORE
:"SR*10
530 PRINT "{C/DN}{C/DN}PLAY AGAIN (Y/N)?"
540 GETKEYQ$:IFQ$="Y"THENRUN:IFQ$<>"N"TH
EN540
550 END
560 PRINT "{CLR}{GRY1}":COLOR0,2:COLOR4,1
5
570 PRINT "{RVON}LOST DUTCHMAN MINE ADVEN
TURE"
580 PRINT "{C/DN}SOME TIME AGO, IN ARIZON
A'S SUPERSTITION"
590 PRINT "MOUNTAINS, THE GOLD OF THE LOS
T"
600 PRINT "DUTCHMAN WAS LOST IN A CAVE."
610 PRINT "{C/DN}AS YOU SEARCH THE CAVES
BE SURE TO"
620 PRINT "AVOID THE GHOSTS (X)."
630 PRINT "{C/DN}COLLECT COINS (.) FOR PO
INTS AND THE"
640 PRINT "MYSTERIOUS CLUES ({RVON}?{RVOF
}) TO HELP YOU ON":PRINT "THE WAY"
650 PRINT "{C/DN}YOU MAY USE JOYSTICK #2
OR CURSOR KEYS"
660 PRINT "TO MOVE. WHICH WOULD YOU LIKE
(J/K)?"
670 GETKEYQ$:IFQ$<"J"ORQ$>"K"THEN670
680 V=ASC(Q$)-74
690 PRINT "{C/DN}PLEASE ENTER YOUR FIRST
INITIAL."
700 GETKEYI$:IFI$<"A"ORI$>"Z"THEN700
710 I=ASC(I$)-64:PRINT "{CLR}"
720 FORX=1065TO1102:POKEX,160:POKEX+800,
160:NEXT
730 FORX=1105TO1825STEP40:POKEX,160:POKE
X+37,160:NEXT
740 S=1106:B=160:G=146:CL=191
750 BX=249:C=99:GP=46
760 FORX=0TOBX:POKES+40*INT(RND(1)*19)+I
NT(RND(1)*35),B:NEXTX
770 FORX=0TOC:POKES+40*INT(RND(1)*19)+IN
T(RND(1)*35),GP:NEXTX
780 FORX=0TO3:RL=S+40*INT(RND(1)*19)+INT
(RND(1)*35):POKERL,CL:NEXTX
790 G=88:G(1)=1428:G(2)=1458:G(3)=1764:L
=S+18
800 FORX=1TO3:POKEG(X),G:NEXTX:POKEL,I
810 RETURN

```

**Programming Note**—Make the graphic character in line 620 by typing SHIFT-X.

**Alteration**—For an easier cave, decrease the value of variable BX in line 750, and vice-versa.

**Alteration**—Changing the value of variable C in line 750 will change the number of gold pieces in the cave.

# Biorhythm

Some experts believe say that our lives are governed by three regular cycles: physical (23 days), emotional (28 days) and intellectual (33 days). This fun program uses computer power to instantly calculate your current status on each cycle, telling you about yourself today, yesterday or tomorrow!

The computer first calculates how many days you have been alive based on your date of birth and today's date. Then it calculates your biorhythm and displays the results for all three cycles on a two-dimensional graph. Results are accurate to within one day for any two dates in the 20th century.

It's easiest to enter this program in the upper-case/lower-case mode. Do this by typing **PRINT CHR\$(14)** and striking the RETURN key while in the direct mode.

**Alteration**—Change the number 5 in lines 40 and 50 to a 7 to change the musical instrument from a guitar to an organ. Then change the **REM** statements in lines 40 and 50 to reflect that change. Try values from 1 to 9 following the **t** in lines 40 and 50 to see what other instruments you can identify and use.

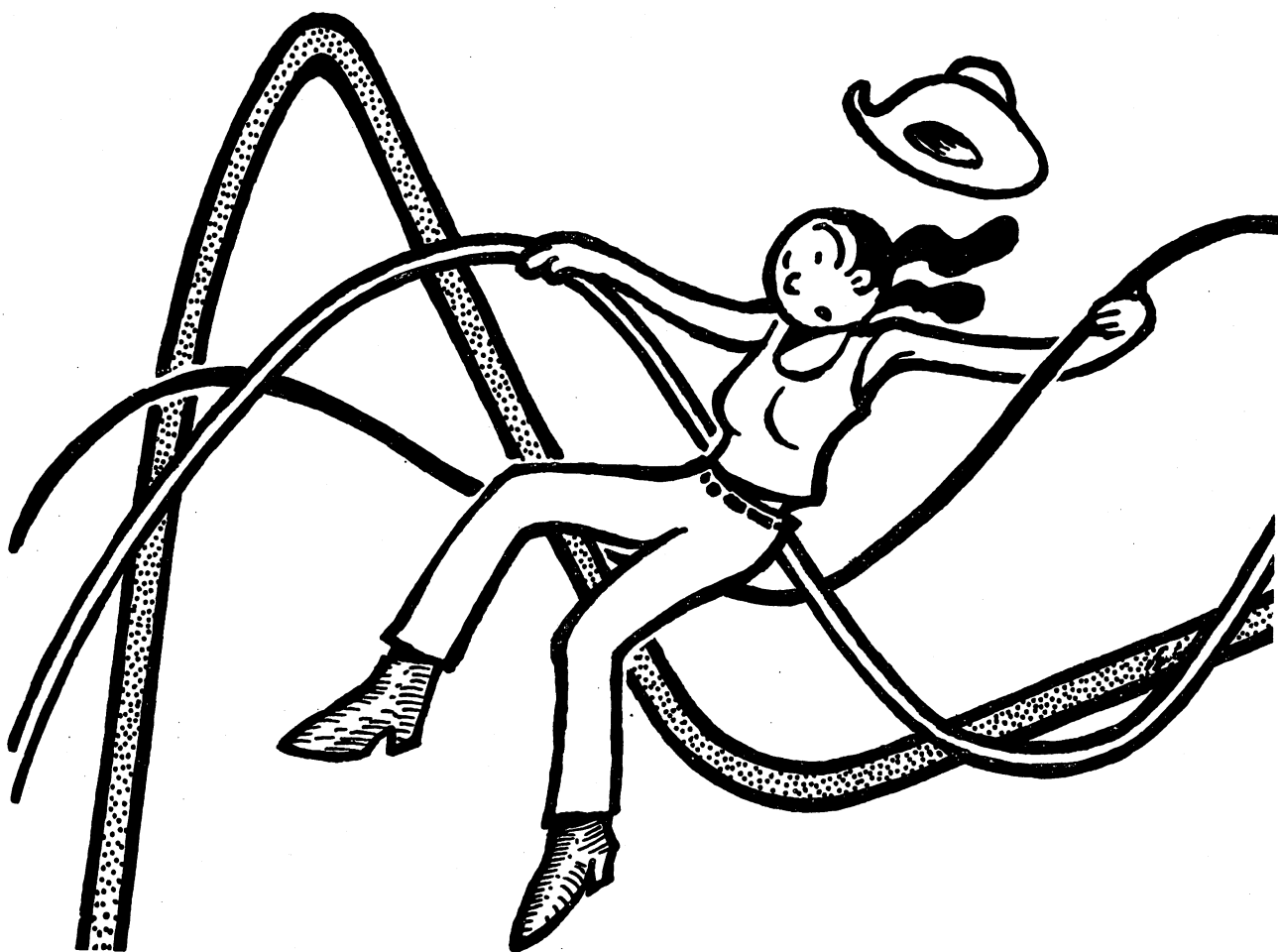
```

10 rem biorhythm
20 scnc1r
30 tempo 8:rem melody by schuman
40 play "v104t5u8x0":rem v1=guitar
50 play "v204t5u8x0":rem v2=guitar
60 a$="v1o4qev2o3icig v1o4qdv2o3ifig v1o
4qcv2o3ieig v1o3qbv2o3icie"
70 b$="v1o3iav2o3if v1o4icv2o3id v1o3ibv
2o3ig v1o4idv2o3if v1o4qcv2o3ieif"
80 c$="v1o3qgv2o3ieid"
90 d$="v1o4qgv2o3ieig v1o4qfv2o3idig v1o
4qev2o3icig v1o4qcv2o3ieig"
100 e$="v1o3qbv2o3idig v1o3qav2o3i#fid v
1o3qgv2o2ibo3id v1o4qrv2o2qg"
110 play a$:play b$: play c$
120 play d$:play e$
130 dimm$(12),p(10),e(10),i(10)
140 color0,16:color4,13
150 forx=1to12:readm$(x):next
160 printchr$(14)"{CLR}{BLUE}"tab(15)"{R
VON}BIORHYTHM"
170 print"{WHT}{C/DN}The theory of biorh
ythms states that"
180 print"each person has three psycholo
gical"
190 print"cycles corresponding to their
physical,"
200 print"emotional, and intellectual st
ates."
210 print"{C/DN}These cycles are said to
begin at birth."
220 print"The physical is 23 days long."
230 print"The emotional is 28 days long.
"
240 print"The intellectual is 33 days lo
ng."
250 print"{C/DN}The first half of the cy
cle is said to"

```

```
260 print"be an 'up' time while the seco  
nd is"  
270 print"considered a 'down' time. The  
midpoint"  
280 print"is called a critical day."  
290 input"{C/DN}Enter birth month (spell  
it)";m1$  
300 m1=0:for x=1 to 12:if left$(m1$,3)=left$(  
m$(x),3) then m1=x  
310 next:if m1=0 then print"no such month":  
goto 290  
320 input"Enter birth day (number)";d1:i  
f d1>31 then 320  
330 input"Enter birth year";y1:if y1<1000  
then print"All digits, please.":goto 330  
340 input"{C/DN}Today's month (spell it)  
";m$
```

MORE →



```

350 m=0:for x=1 to 12:if left$(m$,3)=left$(m
$(x),3) then m=x
360 next:if m=0 then print "no such month":g
oto 340
370 input "Today's day (number)";d:if d>31
then 370
380 input "Today's year";y:if y<1000 then pr
int "All digits, please.":goto 380
390 f=int((y-y1)*365.25+(m-m1)*30.42+d-d
1):x=f-4
400 for i=0 to 10:x=x+1
410 p(i)=x/23-int(x/23):if p(i)>.5 then p(i
)=1-p(i)
420 e(i)=x/28-int(x/28):if e(i)>.5 then e(i
)=1-e(i)
430 i(i)=x/33-int(x/33):if i(i)>.5 then i(i
)=1-i(i)
440 p(i)=p(i)*2:e(i)=e(i)*2:i(i)=i(i)*2:
next
450 print "{CLR}You have been alive"f"day
s!"
460 print "{C/DN}Hit any key to see your
biorhythm for {C/DN}":print m$;d"{C/LF},"y
:getkey q$
470 data jan,feb,mar,apr,may,jun,jul,aug,
sep,oct,nov,dec
480 graphic clr:graphic1,1:color1,7
490 draw1,35,20 to 35,170 to 300,170
500 for i=35 to 280 step 20:draw1,i,95 to i+10,
95:next
510 char1,15,23,"↑":char1,13,24,"today"
520 char1,9,0,"hit any key to continue"
530 for i=51 to 291 step 24:draw1,i,170 to i,17
3:next
540 for i=1 to 3:read t$(i),x(i),y(i)
550 char1,x(i),y(i),t$(i):next
560 data high,0,2,crit,0,11,low,1,21
570 x=-3:for i=5 to 35 step 3:char1,i,22,str$(
x):x=x+1:next
580 char1,5,int(p(0)*19+2.5),"p"
590 char1,37,int(p(10)*19+2.5),"p"
600 char1,5,int(e(0)*19+2.5),"e"
610 char1,37,int(e(10)*19+2.5),"e"
620 char1,5,int(i(0)*19+2.5),"i"
630 char1,37,int(i(10)*19+2.5),"i"
640 x=1:for i=51 to 267 step 24
650 draw1,i,int(p(x-1)*150+19.5) to i+24
,int(p(x)*150+19.5)
660 draw1,i,int(e(x-1)*150+19.5) to i+24
,int(e(x)*150+19.5)

```

---

```
670 draw1,i,int(i(x-1)*150+19.5) to i+24  
    ,int(i(x)*150+19.5)  
680 x=x+1:next  
690 getkeyq$:graphic0  
700 print"{CLR}{C/DN}Calculate another b  
    iorythm (Y/N)?"  
710 getkeyq$:ifq$="y"thenrun:elseifq$(">"  
    n"then710
```

# Queen Of The Nile

Journey through Cleopatra's tomb in search of ancient treasure. Your time is limited to two minutes, and the dangers are many. But clever action will bring you rewards.

Control your progress through the burial maze by using a joystick or the cursor keys to move yourself (U) to the treasure (\$). By pressing the fire button or spacebar, you can blast through walls with dynamite. But be careful because your supply of dynamite is limited. You may destroy treasure too!

If you get too close to a snake pit (S) or mummy (M), you may get caught.

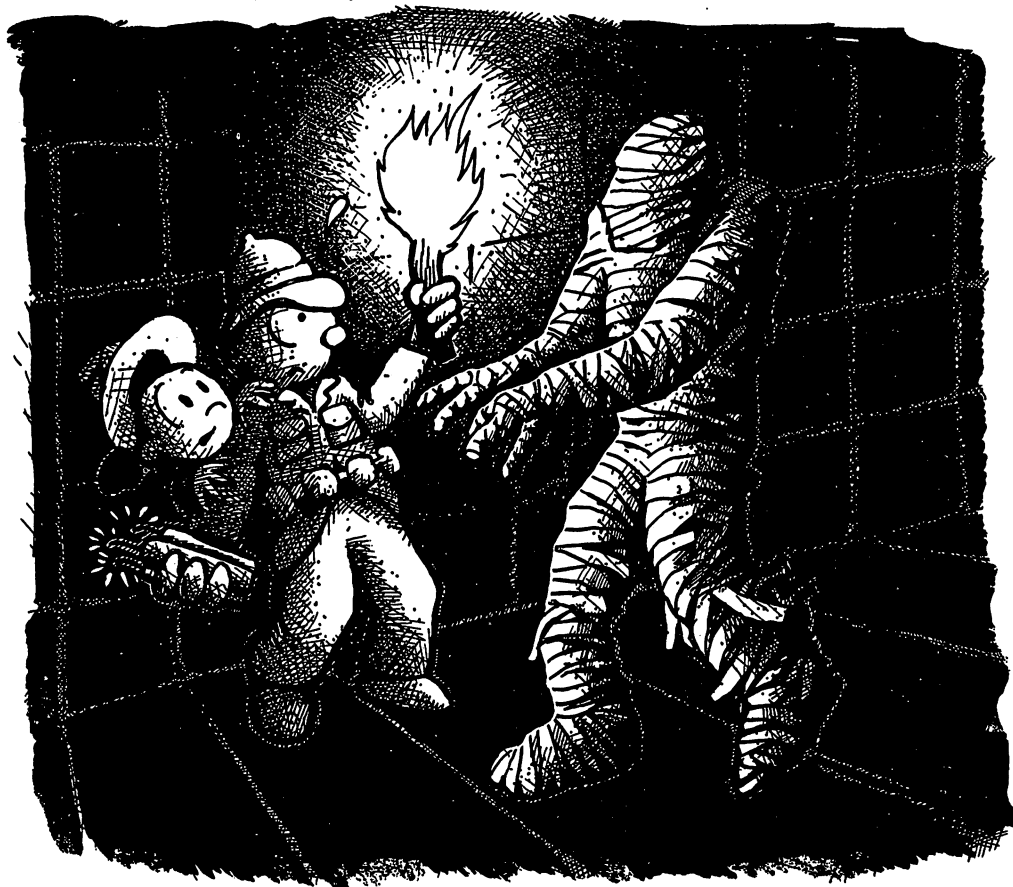
**Alteration**—Change the amount of dynamite you start with by changing the value of **DY** in line 40.

**Alteration**—For a denser and more difficult room, change **.4** in line 70 to **.3**.

**Alteration**—To increase the amount of gold in the room, change the **.9** in line 80 to **.8** or **.7**.

**Alteration**—Change the number of snake pits and mummies by using a number other than **9** in line 90.

```
10 REM QUEEN OF THE NILE
20 FORX=1TO8:READ L(X):NEXT
30 X=RND(0):GOSUB590
40 K$="{C/UP}{C/RT}{C/DN}{C/LF} ":UL=188
4:UC=21:DY=9:CO=54272
50 DV=40:DH=1:WL=160:GP=46:TR=36:MM=13:S
P=81:BL=32
60 FORX=1064TO1103:POKEX,WL:NEXT
70 FORX=1104TO1863:IFRND(1)>.4THENPOKEX,
WL
80 IFRND(1)>.9THENPOKEX,GP:POKEX+CO,7
90 NEXT:FORX=0TO9
```



```

100 M=INT(RND(1)*600)+1144:POKEM,MM:POKE
M+CO,2
110 S=INT(RND(1)*600)+1144:POKES,SP:POKE
S+CO,5
120 NEXT:FORX=1TO6
130 T=INT(RND(1)*480)+1144
140 IFPEEK(T)<>BLTHEN130
150 POKET,TR:NEXT:POKEUL,UC
160 TI$="000000"
170 REM START LOOP
180 FORX=1TO4:IFPEEK(UL+L(X))=SPTHENIFRN
D(1)<.1THEN 410
190 IFPEEK(UL+L(X))=MMTHENIFRND(1)<.1THE
N 400
200 NEXT
210 CHAR1,2,0,"TIME-"+MID$(TI$,4,1)+": "+
RIGHT$(TI$,2)+" GOLD $" +STR$(G)+" DYNA
MITE:" +STR$(DY),1
220 IFVTHEN250
230 ON JOY(2)+1GOTO 420,260,420,270,420,
280,420,290,420
240 GOTO470
250 GETQ$:ON INSTR(K$,Q$)+1 GOTO 420,260
,270,280,290,470
260 D=-DV:GOTO300
270 D=DH:GOTO300
280 D=DV:GOTO300
290 D=-DH
300 SOUND1,3000,1
310 IF PEEK(UL+D)=BL THEN 380
320 IF PEEK(UL+D)=WL THEN 420
330 IF PEEK(UL+D)=TR THEN G=G+INT(RND(1)
*1000)+1000:GOTO380
340 IF PEEK(UL+D)=GP THEN G=G+100:GOTO38
0
350 IF PEEK(UL+D)=MM THEN 400
360 IF PEEK(UL+D)=SP THEN 410
370 REM MOVE U
380 IFUL+D>1944 OR UL+D<1063 THEN 420
390 POKEUL,BL:UL=UL+D:POKEUL,UC:POKEUL+C
O,0:GOTO420
400 POKEUL,BL:E$="MY MUMMY GOT YOU!!!":F
L=1:GOTO530
410 POKEUL,BL:E$="YOU FELL INTO A SNAKE
PIT!!!":FL=1:GOTO530
420 IFVAL(TI$)>200THENE$="TIME HAS EXPIR
ED":GOTO530
430 IFRND(1)>.1THEN 180
440 X=INT(RND(1)*600)+1144:IFPEEK(X)<>32
THEN440
450 POKEX,WL:POKEX+CO,0:GOTO180

```

**Alteration**—Change the time limit to 3 minutes by changing the first statement in line 420 to 420 IF VAL(TI\$)>300 etc.

MORE →

```
460 REM EXPLODE DYNAMITE
470 IFDY=0THEN180
480 FOR X=1TO8:POKEUL+L(X),BL:POKEUL-L(X)
  ,BL:NEXT:DY=DY-1
490 SOUND2,5000,100,0,0,0,3
500 FORVL=15TO0STEP-.03:VOL VL:NEXT
510 VOL15:GOTO180
520 REM END GAME
530 SLEEP1:POKE208,0:PRINT"{CLR}{C/DN}{C
/DN}"TAB(20-LEN(E$)/2+.5);E$
540 IFFL=1THEN560
550 PRINT"{C/DN}  YOU COLLECTED $"G"WOR
TH OF GOLD!"
560 PRINTTAB(12)"{C/DN}{C/DN}PLAY AGAIN
(Y/N)?"
570 GETKEYQ$:IFQ$="Y"THENRUN:ELSEIFQ$<>"
N"THEN570
580 END
590 COLOR0,13:COLOR4,10:PRINT"{CLR}{WHT}
":PRINTTAB(11)"{RVON}QUEEN OF THE NILE"
600 PRINT"{C/DN}YOU MAY USE JOYSTICK #2
OR CURSOR"
610 PRINT"KEYS TO MOVE AND THE FIRE BUTT
ON OR"
```



**Programming Note**—Make the graphic character in line 690 by typing SHIFT-Q.

```
620 PRINT"SPACE BAR TO DYNAMITE THROUGH
WALLS."
630 PRINT"{C/DN}USE {RVON}J{RVOF}OYSTICK
OR {RVON}K{RVOF}EYBOARD (J/K)?"
640 GETKEYQ$:IFQ$<"J"ORQ$>"K"THEN640
650 V=ASC(Q$)-74
660 PRINT"{C/DN}{CLR}YOU HAVE TWO MINUTE
S TO GATHER TREASURE."
670 PRINT"{C/DN}SYMBOLS:":PRINT"{C/DN} {
YELO}$ {WHT} = TREASURE"
680 PRINT"{C/DN} {YELO}.$ {WHT} = GOLD PIE
CE":PRINT"{C/DN} {RED}M {WHT} = MUMMY"
690 PRINT"{C/DN} {GRN}● {WHT} = SNAKE PIT
":PRINT"{C/DN} {BLK}{RVON} {RVOF}{WHT} =
WALL"
700 PRINT"{C/DN}WATCH OUT FOR NARROW PAS
SAGES... THERE"
710 PRINT"ARE SOMETIMES CAVE-INS IN THES
E TOMBS!"
720 PRINT"{C/DN}HIT ANY KEY TO START"
730 GETKEYQ$:PRINT"{BLK}{CLR}":RETURN
740 DATA-40,40,-1,1,-41,-39,41,39
```

# Thin Ice

Don your wool cap and grab your spear and auger because it's time to do some ice fishing on Ted's pond. Due to some recent warm weather, there are spots of thin ice. Avoid them because unusual dangers lurk below. Get as many fish as you can before time runs out. Be careful as you move across the ice because it takes a little while to change direction and speed on the ice!

**Alteration**—To use the numeric keypad to change direction, change line 30 to 30 K\$=".,8624":X=RND(0). This turns on the numeric keypad so 8,6,2 and 4 control up, right, down and left respectively.

**Programming Tip**—The purpose of X=RND(0) in line 30 is to scramble the random-number generator. Otherwise the "random" pattern is the same every time you run the program.

```

10 REM THIN ICE
20 COLOR0,2:COLOR4,16:COLOR1,15:GOSUB740
30 K$=".,8624":X=RND(0)
40 PRINT"{CLR}{LBU}WELCOME TO TED'S POND"
50 PRINT"{C/DN}THE POND IS FROZEN OVER FOR THE FIRST"
60 PRINT"TIME THIS SEASON."
70 PRINT"{C/DN}YOU ARE INVITED TO ICE FISH, BUT BE"
80 PRINT"CAREFUL. THIS WARM SPELL MIGHT HAVE"
90 PRINT"WEAKENED THE ICE. STICK TO THE WHITE"
100 PRINT"ICE IF YOU CAN. IF YOU MUST CROSS THE"
110 PRINT"BLUE ICE, DO IT QUICKLY!"
120 PRINT"{C/DN}CHANGE YOUR DIRECTION WITH THE CURSOR"
130 PRINT"KEYS. SLOW DOWN WITH THE < KEY AND"
140 PRINT"SPEED UP WITH THE > KEY. REMEMBER..."
150 PRINT"IT TAKES A WHILE TO CHANGE DIRECTION"
160 PRINT"AND SPEED ON THE ICE POND."
170 PRINT"{C/DN}YOU GET POINTS FOR THE NUMBER OF FISH"
180 PRINT"YOU CATCH AND FOR SPEED... GOOD LUCK!"
190 PRINT"{C/DN}HIT ANY KEY TO START."
200 GETKEYQ$:PRINT"{CLR}"
210 FORY=1TO5:FORX=14-YTO24+Y:CHAR1,X,6+Y," ",1:NEXTX,Y
220 FORY=1TO5:FORX=8+YTO30-Y:CHAR1,X,11+Y," ",1:NEXTX,Y
230 COLLISION1,510:A1=30:A2=90:A3=180:A4=360:L1=320:L2=0:L3=240:L4=40
240 MOVSPR1,30,70:A=90:S=1:SPRITE1,1
250 GOSUB550:T=TI:SPRITE2,1

```

**Alteration**—Changing variable A1 in line 230 to a value of 45 lets you turn corners faster on the ice. Changing it to 15 will make turns slower. The number you use for A1 must be between 0 and 90 and divide into 90 evenly.

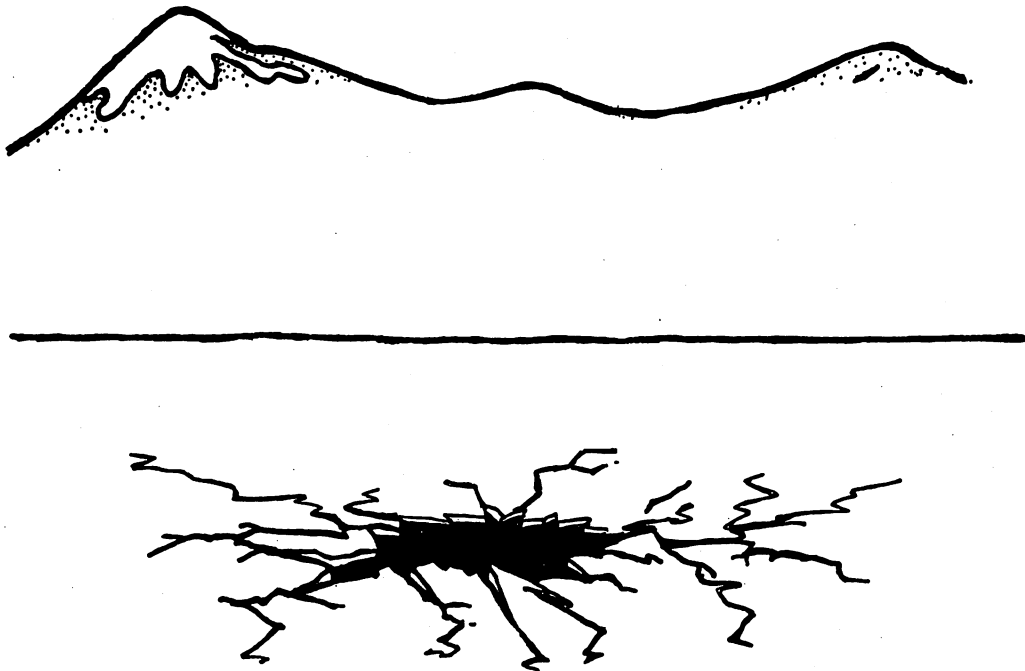
```
260 REM START LOOP
270 CHAR1,14,9,"FISH="+STR$(F),1
280 CHAR1,14,11,"TIME="+STR$(TI-T)+"  ",
1
290 CHAR1,14,13,"SCORE="+STR$(SC),1
300 GETQ$:X=INSTR(K$,Q$)
310 IFX>2THEN350
320 IFX=1THENIFS>0THENS=S-1
330 IFX=2THENIFS<7THENS=S+1
340 GOTO420
350 D=(X-3)*A2
360 IFD>A3+ATHENA=A-A1:GOTO400
370 IFD<A-A3THENA=A+A1:GOTO400
380 IFD>ATHENA=A+A1
390 IFD<ATHENA=A-A1
400 IFA>=A4THENA=A-A4
410 IFA<L2THENA=A+A4
420 MOVSPR1,A #S
```

MORE →



```
430 IFBUMP(2)AND1THEN600
440 X=RSPP0S(1,0):Y=RSPP0S(1,1)
450 IFX>L1 ANDX<405 THEN MOVSPR1,L2,Y:GO
T0470
460 IFX>L1 THEN MOVSPR1,L1,Y
470 IFY>L3 ORY<13 THEN MOVSPR1,X,L4:GOTO
270
480 IFY<L4 THEN MOVSPR1,X,L3
490 GOTO270
500 REM GOT A FISH
510 IFBUMP(1)=L2THENRETURN
520 SC=SC+INT(150-(TI-T)/10)
530 F=F+1:SOUND1,40000,15
540 IFF=20THEN670
550 X=RND(1)*300+21:Y=RND(1)*160+67
560 MOVSPR2,X,Y
570 IFX>85ANDX<250ANDY>95ANDY<180THENIFR
ND(1)<.9THEN550
580 X=BUMP(1):T=TI:RETURN
590 REM ON THIN ICE
600 IFRND(1)>.07THEN440
610 MOVSPR1,0 #0
620 SOUND1,30000,150,2,20000,50,3
630 COLOR0,7:SLEEP3:SPRITE1,0:SPRITE2,0
640 CHAR1,6,12,"{WHT}YOU JUST BECAME SHA
RK MEAL!"
```

**Alteration**—Increasing the value of .07 in line 600 increases the chance of ice breaking, and vice-versa. The range of possibilities must be between 0 and 1.0.



```
650 CHAR1,7,15,"TYPE [RUN] TO PLAY AGAIN
.":PRINT:GOTO710
660 REM WINNER
670 SPRITE1,0:SPRITE2,0
680 PRINT"{CLR}":PRINT:PRINT
690 CHAR1,5,8,"YOU JUST CAUGHT A SCHOOL
OF FISH!"
700 CHAR1,7,10,"IT'S A MIRACLE! YOU WIN!
":PRINT
710 PRINT"{C/DN}{C/DN}FINAL SCORE="SC
720 PRINT"{C/DN}TYPE [RUN] TO PLAY AGAIN
.":END
730 REM FISH SPRITE
740 GRAPHIC1,1
750 CIRCLE 1,25,18,9,2:PAINT1,20,19
760 DRAW 1,17,18 TO 13,16 TO 13,21 TO 17
,18
770 PAINT 1,14,17:DRAW0,29,17
780 DRAW 1,21,14 TO 21,21
790 DRAW 1,32,16 TO 33,16:DRAW 1,21,15 T
O 28,15
800 SSHAPE A$,11,10,34,31:SPRSAY A$,2
810 REM ICE SKATER
820 SCNCLR:CIRCLE 1,17,13,1
830 DRAW 1,18,13 TO 25,14 TO 19,18 TO 18
,13
840 DRAW 1,25,14 TO 28,17 TO 25,19 TO 26
,19 TO 26,20
850 DRAW 1,25,21 TO 20,21 TO 20,18:DRAW
1,25,16
860 DRAW 1,22,22 TO 23,22
870 DRAW 1,21,23 TO 24,23 TO 24,25 TO 21
,25 TO 21,23
880 PAINT 1,20,14:PAINT 1,22,24
890 DRAW 1,21,26 TO 21,28 TO 22,28 TO 22
,26 TO 23,26
900 DRAW 1,19,28 TO 26,28 TO 27,27 TO 26
,26
910 DRAW 1,16,25 TO 19,28 TO 19,26 TO 20
,26 TO 20,27
920 DRAW 1,25,24 TO 27,24:DRAW 1,14,17 T
O 30,26 TO 29,24 TO 29,27
930 SSHAPE A$,11,10,33,31:SPRSAY A$,1
940 SPRITE 1,0,7,0,1:SPRITE 2,0,12
950 GRAPHIC0,1:RETURN
```

# Bomb Squad

You're the expert working against the clock, trying to find a ticking bomb hidden in a million-room tower! You have 250 seconds to find the bomb. Each move takes exactly 10 seconds. To help, you have a bomb-sensitive device that gives a stronger readout as you approach the bomb.

You determine the location of a room by entering values from 0 to 99 for length, width and height. Your device then gives a readout that indicates how close you are to the bomb. 10,000 is the highest readout. A correct value for length, width or height is indicated by double asterisks in place of the number entered.

If you don't find the bomb in 250 seconds, it explodes. If you do find the bomb, you have an additional 100 seconds to defuse it. Guess the three-number combination in the same way you found the room. Enter values from 1-10.

**Alteration**—To make the game less violent, change its name to *Treasure Hunt*. Change the statements that give the user instructions and commentary. The new statements should discuss finding a hidden treasure chest. When the chest is found, the user has to open the padlock. The rest of the game is unchanged.

**Alteration**—To make the game easier, decrease the number of rooms by changing `INT(RND(8)*100)` for variables A, B and C to `INT(RND(8)*50)` in line 120. This gives 125,000 rooms to choose from instead of a million. Be sure to change the instructions if you do this.

**Programming Note**—Make the graphic characters in line 150 by typing `COMMODORE-Q`, `COMMODORE-R` and `SHIFT-+` repeatedly to match the printout shown here.

**Programming Note**—Make the graphic characters in line 160 by typing `COMMODORE-Q`, `COMMODORE-E` and `SHIFT-+` repeatedly to match the printout shown here.

```

10 REM BOMB SQUAD
20 COLOR0,13:COLOR4,4
30 PRINT"{CLR}{WHT}YOU ARE ABOUT TO ACCE
PT A DANGEROUS":PRINT"MISSION."
40 PRINT"{C/DN}A BOMB WHICH YOU MUST DIS
ARM IS HIDDEN":PRINT"IN ONE ROOM OF A MI
LLION-ROOM TOWER."
50 PRINT"{C/DN}YOU DESIGNATE THE ROOM NU
MBER YOU WISH":PRINT"TO SEARCH BY LENGTH
, WIDTH, AND HEIGHT"
60 PRINT"(EACH FROM 0-99). A {RVON}**{RV
OF} INDICATES A":PRINT"CORRECT ENTRY."
70 PRINT"{C/DN}YOU HAVE 250 SECONDS TO F
IND THE BOMB":PRINT"OR IT WILL EXPLODE.
YOUR LOCATION"
80 PRINT"BEACON WILL GIVE A STRONGER SIG
NAL AS":PRINT"YOU APPROACH THE BOMB. WHE
N YOU FIND"
90 PRINT"IT YOU HAVE 100 SECONDS TO DEFU
SE IT."
100 PRINT:PRINT"PRESS ANY KEY TO START G
AME.":GETKEYQ$
110 S1=36878:S2=36877
120 A=INT(RND(8)*100):B=INT(RND(8)*100):
C=INT(RND(8)*100)
130 PRINT"{CLR}":S=10
140 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}{C/DN}{C/DN}0 1 2 3 4 5
6 7 8 9 10"
150 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}++++++
"
160 PRINT"{C/DN}++++++
"
170 PRINT"          BOMB DETECTOR{HOME}"
180 PRINT" L    W    H    TIME    BEACON":PR
INT

```

**Programming Note**—To help you with the number of times to press the spacebar in some program lines, here is a helpful summary:

Line 170 10  
 Line 210 12  
 Line 250 12  
 Line 260 4  
 Line 290 12  
 Line 300 8  
 Line 310 12  
 Line 350 19  
 Line 570 12  
 Line 610 12  
 Line 620 8  
 Line 650 12  
 Line 660 17

```

190 IFA=LTHEN230
200 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}":INPUT"LENGTH";L
210 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}          ":IFL>99ORL<OTHE
N200
220 PRINT"{HOME}{C/DN}{C/DN}{C/DN}"STR$(
L)+" "
230 IFB=WTHEN270
240 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}":INPUT"WIDTH";W
250 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}          ":IFW>99ORW<OTHE
N200
260 PRINT"{HOME}      {C/DN}{C/DN}{C/DN}"S
TR$(W)++" "
270 IFC=HTHEN310
280 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}":INPUT"HEIGHT";H
290 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}          ":IFH>99ORH<OTHE
N200
300 PRINT"{HOME}      {C/DN}{C/DN}{C/D
N}"STR$(H)+" "

```

MORE →

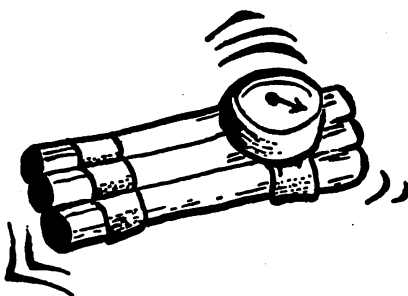


```
310 PRINT"{HOME}"(C/DN){C/DN}
(C/DN)"S
320 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
(C/DN){C/DN}{C/DN}{C/DN}{C/DN}{C/DN}";TA
B(J)" "
330 BE=1E4-(ABS(A-L)+ABS(B-W)+ABS(C-H))*
29
340 J=INT(BE/333.3333+.5):PRINT"{HOME}{C
/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}
(C/DN){C/DN}{C/DN}";TAB(J)"↑"
350 PRINT"{HOME}"(C/DN)
(C/DN){C/DN}"BE
360 PRINT"{HOME}{C/DN}{C/DN}{C/DN}";
370 IFA=LTHENPRINTTAB(1)"(RVON)**(RVOF)"
;
380 IFB=WTHENPRINTTAB(5)"(RVON)**(RVOF)"
;
390 IFC=HTHENPRINTTAB(9)"(RVON)**(RVOF)"
400 IFA=LANDB=WANDC=HTHEN450
410 S=S+10:IFS<260THEN190
420 GOSUB800
430 PRINT"THE BOMB WAS AT":PRINTA;" ";
";B;" ";C
440 END
450 PRINT"{CLR}{C/DN}{C/DN}{C/DN}{C/DN}{
C/DN}{C/DN}{C/DN}{C/DN}{C/DN}
(RVON)BOMB LOCATED(RVOF)"
460 V=INT(RND(8)*10)+1:N=INT(RND(8)*10)+
1:M=INT(RND(8)*10)+1
470 SLEEP4
480 PRINT"{CLR}YOU HAVE LOCATED THE BOMB
.":PRINT"{C/DN}TO DEFUSE IT YOU MUST NOW
ENTER THE"
490 PRINT"CORRECT COMBINATION. EACH PART
IS":PRINT"BETWEEN 1 AND 10. A CORRECT N
UMBER IS"
500 PRINT"INDICATED BY A (RVON)**(RVOF).
"
510 PRINT"{C/DN}GOOD LUCK. YOU HAVE ONLY
100 SECONDS"
520 SLEEP6
530 PRINT"{CLR}":S=10
540 PRINT" LEFT RIGHT LEFT TIME
":PRINT
550 IFA=VTHEN590
560 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
(C/DN)":INPUT"LEFT";A
570 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
(C/DN){C/DN}" :IFA>10ORA<1THE
N560
580 PRINT"{HOME}{C/DN}{C/DN}{C/DN}"A
590 IFB=NTHEN630
```

```

600 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}":INPUT"RIGHT";B
610 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}":IFB>100RB<1THE
N560
620 PRINT"{HOME}{C/DN}{C/DN}{C/D
N}"B
630 IFC=MTHEN670
640 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}":INPUT"LEFT";C
650 PRINT"{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}":IFC>100RC<1THE
N640
660 PRINT"{HOME}{C/DN}{C/DN}{C/DN}"C
670 PRINT"{HOME}{C/DN}{C/DN}{C/DN}"S
680 PRINT"{HOME}{C/DN}{C/DN}{C/DN}";
690 IFA=VTHENPRINTTAB(1)"{RVON}**{RVOF}"
;
700 IFB=NTHENPRINTTAB(9)"{RVON}**{RVOF}"
;
710 IFC=MTHENPRINTTAB(18)"{RVON}**{RVOF}"
"
720 IFA=VANDB=NANDC=MTHEN780
730 S=S+10:IFS<110THEN550
740 GOSUB800
750 PRINT"THE COMBINATION WAS"V;N;M
760 PRINT"{C/DN}CONDOLENCES WILL BE SENT
TO YOUR FAMILY."
770 END
780 PRINT"{C/DN}{C/DN}BOMB DEFUSED"
790 END
800 PRINT"{CLR}":VO=15:REM SOUND EFFECT
810 FORI=1TO22:PRINTTAB(13)"{WHT}***KAB
OOM***":NEXT
820 SOUND1,2000,1500,2,0,0,3
830 DO UNTIL VO<.2
840 VOL VO:COLOR4,3
850 COLOR0,3:FORJ=1TO22:NEXT
860 COLOR0,8:FORJ=1TO22:NEXT
870 VO=VO-.1:LOOP
880 COLOR0,13:COLOR4,4
890 RETURN

```

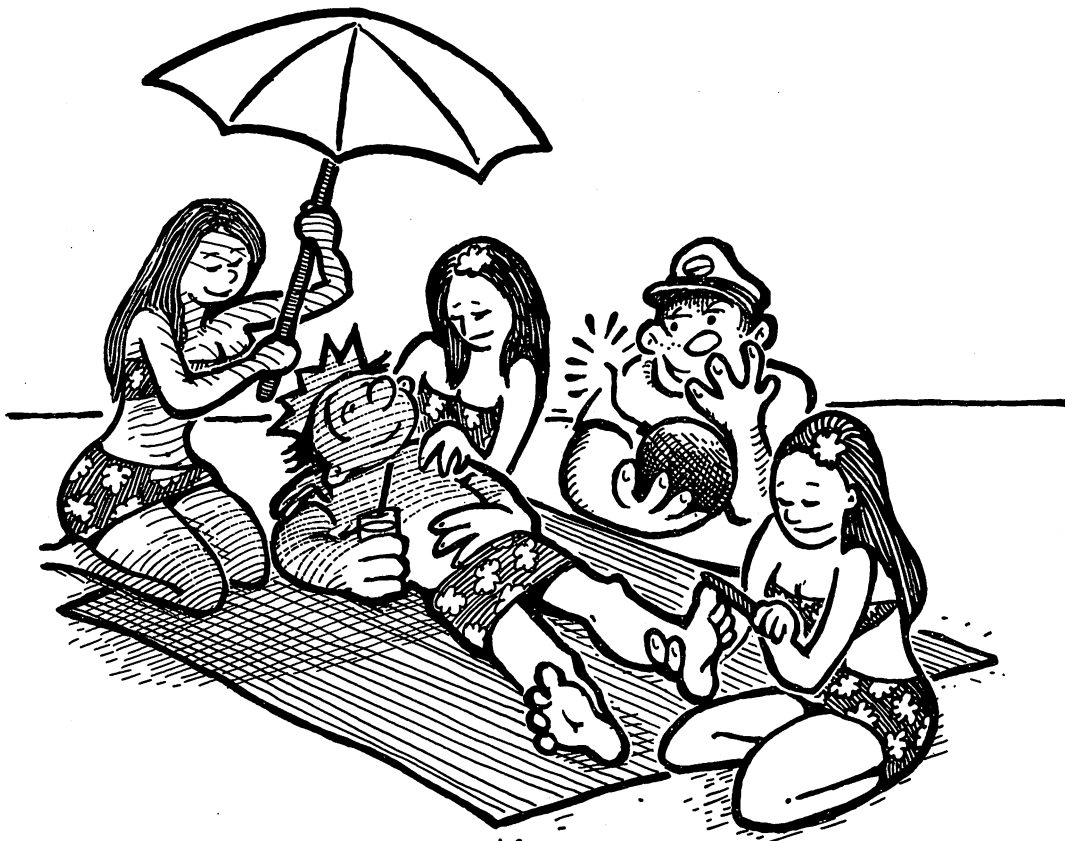


# Utopia

As ruler of an island nation, you're beset with important decisions. The goal is prosperity for you and your people. You try to increase national wealth, personal wealth, population and natural resources. The computer is your aid, giving you up-to-the-minute information and choices, in addition to a contemporary rock motif. Your reign can last up to 10 years—if a revolution doesn't force a change.

**Alteration**—Change any of the opening values in line 20. **P** is population; **M** is treasury money; **F** is fish; **T** is years remaining for your reign.

```
10 SCNCLR:REM UTOPIA
20 P=5000:M=2000000:F=5000:S=10000:T=10:
T=10:COLOR0,7:COLOR4,12:GOSUB 1170
30 PRINT"{CLR}{WHT}HELLO, I AM MODEL 818
82 OF THE"
40 PRINT"SKILLED ANALYSIS MICRO-COMPUTER
"
50 PRINT"DIVISION. YOU MAY CALL ME SAM."
60 INPUT"{C/DN}PLEASE IDENTIFY YOURSELF
(NAME)";N$
70 PRINT"{CLR}WELCOME TO UTOPIA, "N$"."
80 PRINT"{C/DN}AS BENIGN RULER OF UTOPIA
, YOU MUST"
90 PRINT"GUIDE YOUR CITIZENS THROUGH THE
"
```



**Alteration**—Change any of the **PRINT** statements to personalize the game or change the theme of the adventure.

**Alteration**—To leave out the music at the start of each year of your reign, delete **GOSUB 1170** from line 220.

```

100 PRINT"DECISIONS OF STATE.":PRINT"{C/
DN}AS YOUR CONSULTING AID, I WILL PROVID
E"
110 PRINT"YOU WITH VITAL DATA. YOUR STAT
US REPORT"
120 PRINT"WILL BE UPDATED AFTER EACH TRA
NSACTION."
130 PRINT"{C/DN}UTOPIA IS AN ISLAND THAT
IS LOCATED IN"
140 PRINT"THE TROPICS WHERE YOU WILL RUL
E FOR A"
150 PRINT"MAXIMUM OF TEN YEARS. YOU MUST
CONTROL"
160 PRINT"THE USE OF NATURAL RESOURCES W
ISELY."
170 PRINT"{C/DN}GOOD LUCK YOUR HIGHNESS.
"
180 PRINT"MAY THE NAME OF "N$:PRINT"BE A
BLESSING ON OUR ISLAND."
190 PRINT"{C/DN}HIT ANY KEY TO CONTINUE.
":GOSUB1170:GETKEYQ$
200 GOSUB940
210 FORT=10TOSTEP-1:GOSUB970
220 INPUT"WHAT IS YOUR SALARY THIS YEAR"
;X:GOSUB1170
230 M=M-X:R=R+X:GOSUB960
240 IFR>=((RND(8)*3)+1)*MTHENGOSUB1050
250 PRINT"{CLR}{RVON}REPORT{RVOF} FROM M
INISTER OF FISH,":PRINT"EMMY YELLOWTAIL.
"
260 PRINT"{C/DN}YOUR HIGHNESS THIS IS IT
:"
270 A=INT(RND(3)*3)+1
280 IFA=1THENPRINT"ALL IS WELL. THE FISH
THRIVE. THERE IS"
290 IFA=1THENPRINT"PLENTY TO FEED ALL.":
F=F+2000:P=P+5000:M=M+10000:GOSUB960
300 IFA=2THENPRINT"WE NEED MORE BOATS. T
HEY COST $10000"
310 IFA=2THENPRINT"EACH. HOW MANY WILL Y
OU BUY";:GOSUB730:F=500*X
320 IFA=3THENPRINT"THE SEALS ARE EATING
MOST OF THE FISH.":GOSUB750
330 IFP<1000THENGOSUB1050
340 PRINT"{CLR}":GOSUB960
350 PRINT"{RVON}REPORT{RVOF} FROM MINIST
ER OF FARMS,":PRINT"STEVEN SOIL.{C/DN}"
360 X=INT(RND(3)*3)+1
370 IFX=1THENGOSUB480
380 IFX=2THENGOSUB490
390 IFX=3THENGOSUB550

```

MORE →

```
400 IFP=>8000ANDM=>8000000ANDF>8000ANDR>
1500000THEN420
410 GOSUB960:NEXTT
420 FORX=1TO10:PRINT"{CLR}{HOME}{C/DN}":
SLEEP1
430 PRINTTAB(16)"{RVON}           {RVOF}"
440 PRINTTAB(16)"{RVON} YOU WIN {RVOF}"
450 PRINTTAB(16)"{RVON}           {RVOF}"
460 SLEEP1:NEXT
470 PRINT"{C/DN}{C/DN}"N$" IS MADE RULER
FOR LIFE!{C/DN}{C/DN}":GOSUB1170:END
480 PRINT"ALL CROPS ARE DOING WELL.":P=P
+2000:M=M+100000:RETURN
490 PRINT"EXCESS SUGAR CANE HAS BEEN SOL
D FOR"
500 PRINT"$1,000,000 WHAT PERCENTAGE SHO
ULD GO"
510 INPUT"INTO YOUR POCKET (0-100)";X
520 IFX<0ORX>100THEN510
530 M=M+1E6-(1E6*X/100):R=R+1E6*X/100
540 RETURN
550 PRINT"HEAVY FLOODS FROM A TYPHOON HA
VE WIPED"
560 PRINT"OUT MANY CROPS WHAT WILL YOU D
O?"
570 PRINT"A) REPLANT NEW CROPS.":PRINT"B
) LIVE OFF STORED GRAIN"
580 PRINT"C) IMPORT CROPS.{C/DN}"
590 INPUTC$:IFC$<"A"ORC$>"C"THEN590
600 IFC$="A"THENM=M-INT(200000*RND(8)):P
=P-INT(100*RND(8))
610 IFC$="B"THENP=P-INT(2000*RND(8)):M=M
-INT(RND(8)*10000)
620 IFC$="C"THENM=M-INT(RND(3)*400000)
630 IFM<0THENM=0:GOSUB1050
640 IFP<100THENP=100
650 RETURN
660 FORX=1TO5:PRINT"{CLR}{C/DN}":SLEEP1
670 PRINTTAB(10)"DEATH TO "N$"!!!"
680 SLEEP1:NEXT
690 I=I+INT(RND(4)*P/2):R=INT(R*RND(3))
700 IFI>P*.8THENPRINT"YOU HAVE BEEN OVE
RTHROWN.":PRINT"YOU LOSE.":END
710 IFRND(8)<.7THENPRINT"YOU HAVE MAINTA
INED POWER.{C/DN}":RETURN
720 PRINT"YOU HAVE RULED CRUELLY AND ARE
BANISHED":PRINT"FROM UTOPIA.":END
730 INPUTX:IFX=0THENGOSUB1050
740 M=M-X*10000:RETURN
750 PRINT"{C/DN}WHAT WILL YOU DO?"
760 PRINT"A) KILL THE SEALS":PRINT"B) GI
VE UP FISHING"
```

```

770 PRINT"C) LET NATURE HANDLE IT":PRINT
"D) PANIC{C/DN}"
780 INPUTA$:IFA$<"A"ORA$>"D"THEN780
790 IFA$="D"THENPRINT"{C/DN}IT DIDN'T HE
LP.":GOTO750
800 IFA$="A"THENI=I+INT(1000*RND(2))
810 IFA$="C"THENI=I+INT(500*RND(7)):F=F-
INT(RND(4)*3000)
820 IFF<0THENF=0
830 IFA$<>"B"THENRETURN
840 PRINT"{C/DN}HOW WILL YOU FEED THE PE
OPLE?"
850 PRINT"A) LET THEM EAT CAKE.":PRINT"B
) BUY THEM IMPORTED FOOD."
860 PRINT"C) GROW MORE FOOD."
870 INPUTB$:IFB$<"A"ORB$>"C"THEN870
880 IFB$="A"THENGOSUB1050
890 IFB$="B"THENM=M-P*250
900 IFB$="C"THENM=M-P*200:P=INT(P*.95)
910 IFM<0THENM=0:GOSUB1050
920 RETURN
930 REM SET UP STATUS REPORT
940 PRINT"{CLR}{HOME}":FORX=1024TO1063:P
OKEX,90:POKEX+400,90:NEXT
950 FORX=1064TO1424STEP40:POKEX,90:POKEX
+39,90:NEXT:GOTO970
960 PRINT"{C/DN}HIT ANY KEY TO CONTINUE.
":GETKEYQ$
970 PRINT"{HOME}{HOME}"TAB(4)"{C/DN}{RVO
N}STATUS REPORT: ISLAND OF UTOPIA"
980 PRINTTAB(10)"{C/DN}POPULATION:"P"{C/
LF} "
990 PRINTTAB(12)"TREASURY:"M"{C/LF} "
1000 PRINTTAB(16)"FISH:"F"{C/LF} "
1010 PRINTTAB(5)"PERSONAL WEALTH:"R"{C/L
F} "
1020 PRINTTAB(16)"YEAR:"10-T
1030 PRINTTAB(10)"INSURGENTS:"I"{C/LF}
":PRINT"{C/DN}{C/DN}"CHR$(27)"T"
1040 PRINT"{C/DN}{CLR}":RETURN
1050 PRINT"{CLR}THE INSURGENTS LED BY TH
E GREAT"
1060 PRINT"CATHY COURAGEOUS HAVE REBELLE
D."
1070 PRINT"{C/DN}WHAT WILL YOU DO?"
1080 PRINT"A) GO INTO EXILE.":PRINT"B) T
URN OVER ALL CASH":PRINT"C) RESIST"
1090 INPUTD$:IFD$<"A"ORD$>"C"THEN1090
1100 IFD$="A"THEN1150
1110 IFD$="B"THENM=M+R:K=R:R=0:IFK<.1*RT
HENGOSUB660

```

**Programming Tip**—This program uses a “window” technique to print messages. The status report is due to lines 970-1040. In line 1030, the new top of the screen is set with ESC-T sequence **CHR\$(27)"T"**. This lets the program write in the bottom part of the screen while the status report is unchanged. When it is time to update, the **PRINT** statement in line 970 cancels the window.

MORE →

```
1120 IFD$="C"THENGOSUB660
1130 I=I+INT(RND(8)*P/5)
1140 RETURN
1150 IFA$="A"THENPRINT"THE SEALS BLOCK Y
OUR ESCAPE.":END
1160 PRINT"YOU ESCAPE BUT YOU STILL LOSE
THE GAME."
1170 REM "A LITTLE ROCK & ROLL "
1180 TEMPO 12
1190 PLAY "V104T8U8X0":REM V1=GUITAR
1200 PLAY "V204T5U8X0":REM V2=GUITAR
1210 PLAY "V304T3U8X0":REM V3=DRUM
1220 A$="V302HBV103IRV201IGIGV103IDIGV20
1IGIGV103IDV303HDTV103IBV201IGIGV103IAIGV
201IGIGV103IA"
1230 B$="V302HGV103IRV201IEIEV103IBI#FV2
01IEIEV103IB V302HBV103IGV201IEIEV103I#F
IEV201IEIEV103I#F"
1240 C$="V303.HEV103IRV202ICICV103IG04ID
V201ICICV103IG04ICV202ICICV103IGV303QEV1
03IBV202ICICV103IA"
1250 D$="V303.H#FV103IRV202IDIDV103IA04I
EV202IDIDV103IA04IDV202IDIDV103IAV302Q#F
V104ICV202IDIDV104ID"
1260 PLAYA$:PLAYA$:PLAYB$:PLAYB$:PLAYC$:
PLAYD$:PLAYA$
1270 RETURN
```

# Tic-Tac-Toe

This is a classic game of strategy for two players. The computer provides the playing board and acts as master of ceremonies. It checks the progress of the game after each move and either announces the winner or determines whether the game is a tie.

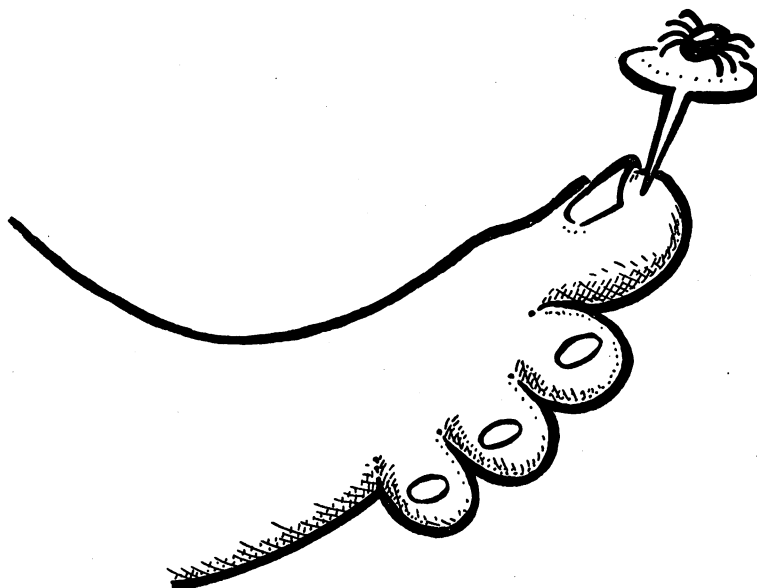
**Alteration**—Change the second number in the **COLOR** statements of line 30 to change the color of the background (**COLOR 0**) and the border (**COLOR 4**). Use values from 1 to 16.

```

10 REM TIC-TAC-TOE
20 DIMM(9),K(9),T(7,2)
30 COLOR0,1:COLOR4,5
40 FORW=1TO9:READM(W):NEXTW
50 FORW=0TO7:FORJ=0TO2:READT(W,J):NEXTJ,
  W
60 FORW=1TO9:K(W)=0:NEXTW
70 DATA1319,1323,1327,1479,1483,1487,163
  9,1643,1647
80 DATA1,2,3,4,5,6,7,8,9,1,4,7,2,5,8,3,6
  ,9,1,5,9,3,5,7
90 PRINT"{CLR}{WHT}HELLO. YOU ARE ABOUT
  TO PLAY TIC-TAC-TOE"
100 INPUT"{C/DN}WHO ARE YOU";A$:PRINT:PR
  INT"{C/DN}"A$", YOU MAY PLAY WITH A FRIE
  ND."
110 PRINT"I WILL ANNOUNCE THE GAME.":INP
  UT"{C/DN}WHO DO YOU WANT TO PLAY WITH";B
  $
120 PRINT"{CLR}"A$ AND "B$", YOU CAN TA
  KE"
130 PRINT"TURNS BY ENTERING X OR O IN TH
  E PLAYING"

```

MORE →



**Programming Note**—To help you with the number of times to press the spacebar in some program lines, here is a helpful summary. Where you see more than one large block of spaces, the number of spaces in each block is given, separated by a comma:

Line 300 3, 1, 3, 1  
 Line 310 11  
 Line 320 3, 1, 3, 1  
 Line 330 11  
 Line 340 3, 1, 3, 1  
 Line 380 38  
 Line 420 38

```

140 PRINT"GRID. EACH PLAYER MAY ENTER ON
CE PER"
150 PRINT"TURN. THE PLAYER WHO GETS THRE
E IN A":PRINT"ROW WINS."
160 PRINT"A ROW MAY BE HORIZONTAL, VERTI
CAL OR":PRINT"DIAGONAL."
170 PRINT"{C/DN}THE FIRST PLAYER USES AN
X."
180 PRINT"THE SECOND PLAYER USES AN O."
190 PRINT"{C/DN}{C/DN}{C/DN}<<<<< PRESS
ANY KEY TO CONTINUE >>>>>":GETKEYQ$
200 PRINT"{CLR}WHEN YOU SEE THE SCREEN,
YOU WILL SEE"
210 PRINT"NUMBERS IN THE BOXES WHERE THE
LETTERS"
220 PRINT"WILL GO. TO PLACE YOUR LETTER,
SIMPLY"
230 PRINT"TYPE THE NUMBER LOCATED WHERE
YOU WANT"
240 PRINT"YOUR LETTER TO GO, AND PRESS {
RVON}RETURN{RVOF}."
250 PRINT"{C/DN}{C/DN}WHO WILL GO FIRST,
"A$" OR "B$;
260 INPUTZ$: IFZ$<>A$ANDZ$<>B$THEN250
270 IFZ$=A$THENF$=A$:S$=B$:GOTO290
280 S$=A$:F$=B$
290 PRINT"{CLR}{C/DN}{C/DN}{C/DN}{C/DN}{
C/DN}"
300 FORW=1TO3:PRINTTAB(14)"      {RVON} {RV
OF}      {RVON} {RVOF}":NEXTW
310 PRINTTAB(14)"{RVON}          {RVOF}
"
320 FORW=1TO3:PRINTTAB(14)"      {RVON} {RV
OF}      {RVON} {RVOF}":NEXTW
330 PRINTTAB(14)"{RVON}          {RVOF}
"
340 FORW=1TO3:PRINTTAB(14)"      {RVON} {RV
OF}      {RVON} {RVOF}":NEXTW
350 FORW=1TO9:POKEM(W),W+48:NEXTW
360 T=0:FL=0
370 PRINT"{HOME}"F$", ENTER YOUR MOVE";:
INPUTM$
380 PRINT"{HOME}
"
390 M=VAL(M$):IFM>9ORM<0THEN370
400 POKEM(M),24:K(M)=M:T=T+1:GOSUB490:IF
FL=1THEN460
410 PRINT"{HOME}"S$", ENTER YOUR MOVE";:
INPUTM$
420 PRINT"{HOME}
"
430 M=VAL(M$):IFM>9ORM<0THEN410

```

```

440 POKEM(M),15:K(M)=M:T=T+1:GOSUB490:IF
FL=1THEN460
450 GOTO370
460 PRINT"{HOME}"W$:INPUT"{C/DN}PLAY AGA
IN";Q$
470 IFLEFT$(Q$,1)="Y"THEN60
480 END
490 FORW=0TO7:A=PEEK(M(T(W,0))):B=PEEK(M
(T(W,1))):C=PEEK(M(T(W,2)))
500 IFA=24ANDB=24ANDC=24THENW$=F$+" WINS
!":FL=1:GOSUB540
510 IFA=15ANDB=15ANDC=15THENW$=S$+" WINS
!":FL=1:GOSUB540
520 IFFL=0ANDT=9THENFL=1:W$="TIE GAME!"
530 NEXTW:RETURN
540 FORI=0TO2:POKEM(T(W,I)),PEEK(M(T(W,I
)))+128:NEXTI:RETURN

```

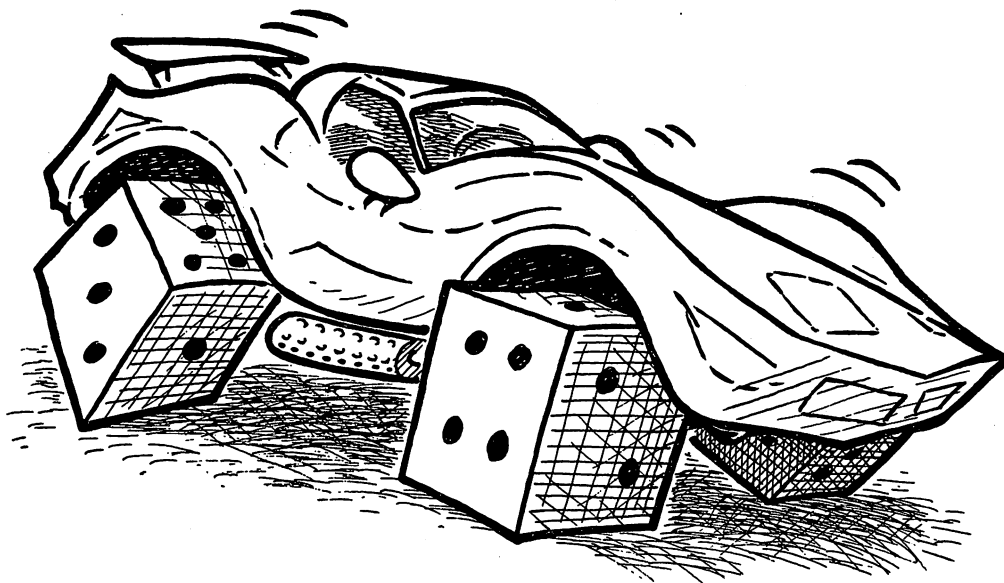
**Alteration**—Add introductory or victory music by taking a music routine from another game in this book. Insert it at the beginning of the game or at the end by extending the subroutine of line 540.

---

# Dice Race

Here is a dice-simulation game using a computer-generated pair of dice. Two players take turns "rolling" the dice. Each player uses die values to move two cars toward a finish line. The first player with both cars over the line wins.

```
10 REM DICE RACE
20 DIMD(18):PRINT"{CLR}"
30 FORX=1TO5:READR$(X):NEXT
40 FORX=1TO18:READD(X):NEXT:GOSUB610
50 FORX=1TO6:D$(X)="{RVON}":NEXT
60 FORX=1TO6:FORY=0TO2
70 D$(X)=D$(X)+R$(D(3*X+Y-2))+ "{C/DN}{C/
LF}{C/LF}{C/LF}"
80 NEXTY,X
90 COLOR0,1:PRINTTAB(15)"{RVON}{WHT}DICE
RACERS"
100 PRINT"{C/DN}THIS GAME IS FOR TWO PLA
YERS."
110 INPUT"{C/DN}PLAYER ONE'S NAME";N1$
120 INPUT"PLAYER TWO'S NAME";N2$
130 PRINT"{C/DN}YOU EACH HAVE TWO CARS T
O DRIVE BY"
140 PRINT"MOVING THEM ACCORDING TO THE T
HROW"
150 PRINT"OF THE DICE. YOU CAN MOVE ONE
CAR THE"
```



**Programming Note**—To help you with the number of times to press the spacebar in some program lines, here is a helpful summary:

Line 290 6  
Line 300 6  
Line 490 12

```

160 PRINT"VALUE OF BOTH DICE OR SPLIT TH
E DICE"
170 PRINT"AND MOVE BOTH CARS."
180 PRINT"{C/DN}YOU CANNOT MOVE MORE THA
N THE VALUE OF":PRINT"THE DICE."
190 PRINT"{C/DN}THE FIRST PLAYER TO HAVE
BOTH CARS"
200 PRINT"ACROSS THE FINISH LINE WINS. I
F BOTH"
210 PRINT"PLAYERS GET ACROSS IN THE SAME
ROUND,"
220 PRINT"THE ONE WHOSE CARS ARE FARTHE
S T WINS."
230 PRINT"{C/DN}AFTER THE DICE ROLL, YOU
WILL BE ASKED"
240 PRINT"HOW MUCH YOU WANT TO MOVE YOUR
FIRST"
250 PRINT"CAR. YOU MUST ENTER ONE OF THE
DIE OR"
260 PRINT"THE SUM OF THE DICE. THE COMPU
TER WILL"
270 PRINT"CALCULATE THE MOVE FOR CAR TWO
."
280 PRINT"{C/DN}HIT ANY KEY TO START":GE
TKEYQ$
290 R1$="{RVON}{GRY2}          {WHT} {GRY2}
      "
300 R2$="{RVON}{GRY2}          "
310 PRINT"{HOME}{HOME}{CLR}"TAB(14);R1$
320 PRINTTAB(14)"{RVON}{GRY2}*F-I-N-I-S-
H*"
330 FORX=1TO11:PRINTTAB(14);R1$:PRINTTAB
(14);R2$:NEXT
340 IFLEN(N1$)>6THENN1$=LEFT$(N1$,6)
350 IFLEN(N2$)>6THENN2$=LEFT$(N2$,6)
360 PRINT"{WHT}"TAB(14)N1$;TAB(21)N2$"{H
OME}"
370 FORX=1TO4:SPRITEX,1:NEXT
380 WINDOW0,0,13,23
390 FORP=1TO2:PRINT"{C/DN}{HOME}{C/DN}{W
HT}PLAYER"P
400 D1=INT(RND(1)*6)+1:D2=INT(RND(1)*6)+
1
410 CHAR1,1,4,D$(D1):CHAR1,1,9,D$(D2)
420 D=D1+D2:PRINT"{C/DN}{C/DN}HOW MANY{C
/DN}{C/DN}"
430 PRINT"{C/UP}CAR #P*2-1::INPUT"      {
C/LF}{C/LF}{C/LF}{C/LF}";Q$
440 Q1=VAL(Q$):IFQ1<>DANDQ1<>D1ANDQ1<>D2
ANDQ1<>0THEN430
450 Q2=D-Q1:M(P*2-1)=Q1:M(P*2)=Q2:NEXTP
      MORE →

```

## Dice Race

**Alteration**—To move the cars farther with each turn (to shorten the game), change line 460 to 460 FOR X=1 TO 4: MOVSPR X<+, -4\*M(X): NEXT

**Programming Note**—Make the graphic character in line 580 by typing SHIFT-Q.

**Alteration**—Change the color of the cars by changing the third number in each **SPRITE** statement in line 710. For example, 710 **SPRITE 1,0,3**: etc. will change Sprite 1 to red.

```
460 FORX=1TO4:MOVSPRX,+0,-2*M(X):NEXT
470 FORX=1TO3STEP2:IFRSPPOS(X,1)<63ANDRS
PPOS(X+1,1)<63THENF=1
480 NEXT:IFF<>1THEN390:ELSEF=0
490 PRINT"{HOME}":FORX=1TO20:PRINT"
":NEXTX
500 P1=RSPPOS(1,1)+RSPPOS(2,1)
510 P2=RSPPOS(3,1)+RSPPOS(4,1)
520 IFP1=P2THENPRINTN1$ AND "N2$ TIED!
":GOTO550
530 IFP1<P2THENPRINTN1$ WINS!":GOTO550
540 PRINTN2$ WINS!"
550 PRINT"{C/DN}{C/DN}PLAY AGAIN":PRINT"
(Y/N)?"
560 GETKEYQ$:IFQ$="Y"THENGOSUB720:GOTO31
0
570 IFQ$<>"N"THEN560:ELSEEND
580 DATA" ", "●", " ", "●", " ", "●", "●●"
590 DATA1,3,1,4,1,2,4,3,2,5,1,5,5,3,5,5,
5,5
600 REM DRAW CAR
610 COLOR4,10:GRAPHIC1,1
620 FORX=1TO4:CIRCLE1,12,14,3,4
630 PAINT1,12,14:DRAW1,16,8 TO 16,15
640 BOX1,10,3,14,8,0,1
650 BOX1,8,4,16,5,0,1
660 BOX1,6,14,8,17,0,1
670 BOX1,16,14,18,17,0,1
680 CHAR1,1,1,CHR$(X+48),1
690 SSHAPEA$,1,1,24,22:SPRSABA$,X
700 SCNCLR:NEXT
710 SPRITE1,0,10:SPRITE2,0,14:SPRITE3,0,
7:SPRITE4,0,8
720 FORX=1TO4:MOVSPRX,115+25*X,220:NEXT
730 GRAPHIC0,1:RETURN
```

# Alien

Here's your chance to be the alien! From your space capsule, watch the earth come into view. Choose your options carefully. Will you invade or come in peace?

**Alteration**—Try developing a scrolling introduction to the game in lines prior to line 20. Borrow the screen-scrolling techniques from *Space Maneuvers*.

**Programming Note**—To help you with the number of times to press the spacebar in some program lines, here is a helpful summary. Where you see more than one large block of spaces, the number of spaces in each block is given, separated by a comma:

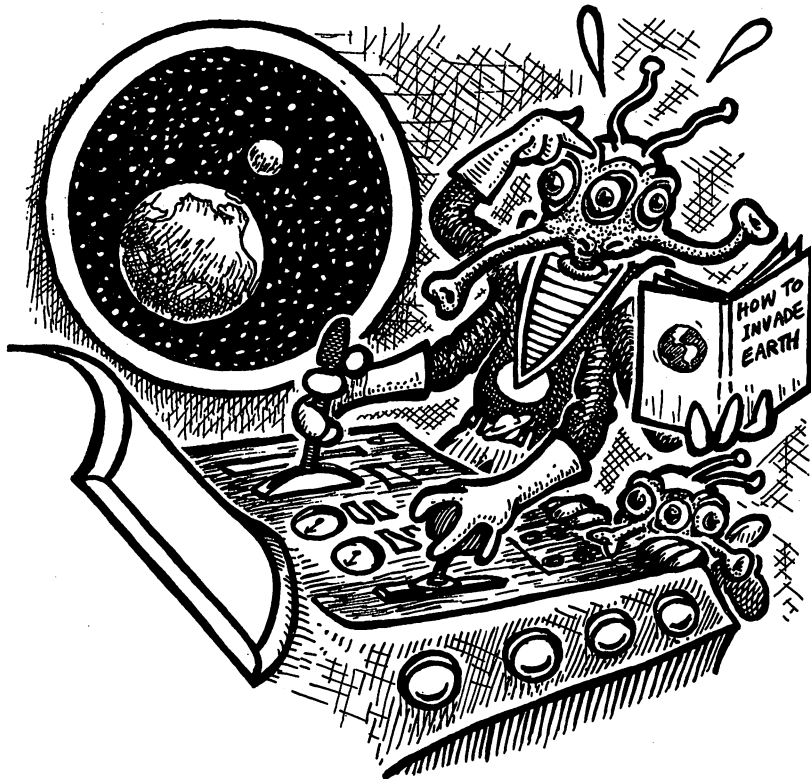
Line 80 3,8  
Line 760 4,4

```

10 REM ALIEN
20 PL=0:GOSUB810:CL$="{HOME}{C/DN}{C/DN}
  "+CHR$(27)+"Q{C/DN}"+CHR$(27)+"Q{C/UP}":
  DN$="{HOME}{C/DN}{C/DN}{C/DN}{C/DN}"
30 FORX=1TO4:READG$(X):NEXT
40 FORX=1TO4:READH$(X):NEXT
50 FORX=1TO4:READO$(X):NEXT
60 PRINT"{C/DN}{HOME}{WHT}COMMUNICATION:
  "
70 PRINT"{C/DN}{C/DN}{C/DN}{C/DN}{WHT}RO
  CKET ORIENTATION:"
80 PRINT" {RVON}      F{RVOF}          SPEED:
  "
90 PRINT" {RVON} {RED} {WHT} U{RVOF}    W
  ARP DRIVE:"
100 PRINT" {RVON} {RED} {WHT} E{RVOF} AL
  ERT STATUS:"

```

MORE →



```

110 PRINT" {RVON} {RED} {WHT} L{RVOF}"
120 PRINTDN$:FORX=1TO4:PRINTTAB(20);G$(X
):NEXT
130 PRINTCL$"{WHT}EARTH ON MONITOR."
140 SLEEP3
150 PRINTCL$"A-INVAD E B-FLEE C-PEACE"
160 PRINT"WHY DO YOU COME (LETTER)?"
170 GETKEYC$:IFC$="A"THEN210
180 IFC$="B"THEN540
190 IFC$="C"THEN750
200 GOTO170
210 PRINTCL$"WOULD YOU RECONSIDER (Y/N)?
"
220 GETKEYQ$:IFQ$="Y"THEN150:ELSEIFQ$<>"
N"THEN220
230 PRINTCL$"WE MUST DEFEND OURSELVES!"
240 SOUND1,20000,400,0,10000,350
250 PRINTDN$:PRINTTAB(20)"{C/DN}{C/DN}{C
/DN}{RVON}{RED} {WHT}RED ALERT!{RED} {
WHT}{RVOF}"
260 SLEEP5:SOUND1,8000,300,2,5000,1200
270 PRINTCL$"THEY ARE FIRING!"
280 COLOR4,3:SLEEP3:COLOR4,1
290 PRINTCL$"S-SHIELDS UP OR F-FLEE ?"
300 GETKEYQ$:IFQ$="F"THEN540:ELSEIFQ$<>"
S"THEN300
310 S=S+1
320 IFRND(1)<.5ANDS>3THEN500
330 PRINTCL$"SHIELD INTACT":SLEEP3
340 PRINTCL$"A-ATTACK B-FLEE C-PEACE"
350 PRINT"WHAT NOW (LETTER)?"
360 GETKEYQ$:IFQ$="A"THEN400
370 IFQ$="B"THEN540
380 IFQ$="C"THEN750
390 GOTO360
400 PRINTCL$:INPUT"WHICH CITY";N$
410 A=RND(1)
420 IFA<.3THENPRINTCL$"ATTACK FAILED":GO
TO440
430 PRINTCL$;N$" DESTROYED!"
440 SLEEP3
450 IFA>.95THEN SCNCLR:GRAPHICO:PRINT"{H
OME}{CLR}EARTH SURRENDERS! YOU WIN!":STO
P
460 IFA>.05THEN230
470 GRAPHICO:PRINT"{HOME}{CLR}I CANNOT L
ET YOU KILL INNOCENTS!"
480 PRINT"YOUR LIFE SUPPORT WAS TURNED O
FF.":PRINT"YOU LOSE!"
490 STOP
500 GOSUB770:GRAPHICO:PRINT"{HOME}{CLR}Y
OUR SHIELDS DID NOT HOLD OUT!"

```

**Alteration**—Change the likelihood of Earth surrendering by changing .95 in line 450 to a different value. A smaller number means a greater chance of surrender.

```

510 PRINTTAB(11); "*** YOU LOSE! ***"
520 STOP
530 REM HYPERSPACE
540 PRINTCL$:BOX0,2,11,99,99,0,1
550 PRINTCL$"{WHT}ENTER X COORDINATE";:I
NPUTX$
560 INPUT"ENTER Y COORDINATE";Y$
570 PRINTCL$"PRESS 'W' TO WARP OUT"
580 GETKEYQ$:IFQ$<>"W"THEN580
590 PRINTDN$:FORX=1TO4:PRINTTAB(20);H$(X
):NEXT
600 FORX=2TO99STEP4:DRAW2,49,44 TO X,11:
NEXT
610 FORY=11TO99STEP4:DRAW2,49,44 TO 99,Y
:NEXT
620 FORX=99TO2STEP-4:DRAW2,49,44 TO X,99
:NEXT
630 FORY=99TO11STEP-4:DRAW2,49,44 TO 2,Y
:NEXT
640 FORW=0TO9:FORT=1TO200:NEXTT
650 PRINTCL$"{WHT}WARP"STR$(W):NEXTW
660 FORW=9TO0STEP-1:FORT=1TO200:NEXTT
670 PRINTCL$"{WHT}WARP"STR$(W):NEXTW
680 IFRND(1)>.75THEN730
690 PL=1:BOX0,2,11,99,99,0,1:GOSUB930
700 PRINTDN$:FORX=1TO4:PRINTTAB(20);O$(X
):NEXT
710 PRINTCL$"{WHT}OMEGA ON MONITOR."
720 PRINT"WELCOME TO OMEGA 5... A SAFE E
SCAPE!":SLEEP3:STOP
730 GOSUB770
740 GRAPHICO:PRINT"{HOME}{CLR}YOU HIT A
STAR! YOU LOSE!":SLEEP3:STOP
750 PRINTCL$"WELCOME TO PLANET EARTH."
760 PRINT"{GRN}{RVON}      {WHT}YOU WIN!!{
GRN}      ":SLEEP3:STOP
770 SCNCLR:PRINT"***DESTROYED***"
780 SOUND1,20000,1000,2,20000,0,3
790 SLEEP1:DOWHILEV>0:V=V-.4:LOOP
800 RETURN
810 REM GRAPHIC DISPLAY
820 REM SET UP CONTROL PANEL
830 WINDOW0,13,39,23
840 COLOR 0,1:COLOR4,1:COLOR1,7
850 COLOR 2,2:COLOR3,10:GRAPHIC4,1,13
860 COLOR3,14:FORX=28TO34STEP2
870 CHAR3,X,6,"♦":NEXT:COLOR3,5
880 BOX2,110,18,140,40:BOX2,108,16,142,4
2
890 COLOR2,11:CHAR2,28,3,"♠♠£00♥":COLOR2
,2

```

**Alteration**—Change the likelihood of hitting a star during Warp Out by changing .75 in line 680 to a different value. A smaller number means you are more likely to hit one.

**Programming Note**—Make the graphic character in line 870 by typing SHIFT-Z.

**Programming Note**—Make the graphic characters in line 890 by typing SHIFT-A, SHIFT-X, £, SHIFT-W (twice) and SHIFT-S.

MORE →

**Programming Note**—Make the graphic character in line 900 by typing COMMODORE-D.

```

900 FORX=28TO34:FORY=8TO11:Z=RND(1)*15+2
:COLOR3,Z:CHAR3,X,Y,"█":NEXTY,X
910 COLOR2,8:BOX2,112,65,141,97:COLOR2,2
920 REM DRAW EARTH
930 COLOR3,10:IFPL=1THENCOLOR3,13:COLOR1
,10
940 FORX=1TO20:RX=RND(1)*97+2:RY=RND(1)*
88+11:DRAW2,RX,RY:NEXT
950 CIRCLE 1,50,60,17,23:PAINT1,50,50
960 CIRCLE 2,50,60,17,23
970 CIRCLE 2,50,60,17,23
980 CIRCLE 2,50,33,5,8,135,225
990 PAINT 2,50,38
1000 CIRCLE 2,50,87,5,8,315,45
1010 PAINT 2,50,80
1020 BOX 2,1,10,100,100:BOX2,102,10,150,
100
1030 IFPL=1THENCOLOR1,10:COLOR2,2:COLOR3
,13
1040 DRAW 3,51,44 TO 60,43 TO 61,59 TO 5
9,59 TO 59,62
1050 DRAW 3,60,63 TO 63,66 TO 66,66 TO 6
3,75 TO 59,71
1060 DRAW 3,59,70 TO 60,68 TO 60,66 TO 55
,62
1070 DRAW 3,54,62 TO 53,62 TO 53,65:DRAW
3,52,62 TO 50,59
1080 DRAW 3,50,58 TO 50,55 TO 45,49 TO 4
2,49 TO 41,51 TO 39,49
1090 DRAW 3,43,49 TO 41,46 TO 41,45 TO 4
3,43 TO 44,43 TO 46,46 TO 51,44
1100 PAINT 3,55,55
1110 DRAW 3,40,63 TO 37,66 TO 36,67
1120 IFPL=0THENRETURN
1130 REM DRAW OMEGA PLANET
1140 DRAW3,35,65 TO 37,54 TO 39,51 TO 42
,53 TO 47,48 TO 55,47
1150 DRAW3,55,47 TO 52,53 TO 60,63 TO 52
,66 TO 44,62 TO 39,68 TO 35,65
1160 PAINT3,40,60:DRAW3,64,71TO57,75TO47
,78TO46,75TO49,69TO53,73TO64,71
1170 PAINT3,50,76
1180 COLOR3,8:CIRCLE3,80,35,5,7
1190 CIRCLE2,80,35,6,8:PAINT3,80,35
1200 RETURN
1210 DATA"EARTH","SUBLIGHT","OFF","{GRN}
GREEN
"
1220 DATA"OMEGA SYSTEM","HYPERSPACE","ON
","{YELO}YELLOW
"
1230 DATA"OMEGA SYSTEM","SUBLIGHT ",""OF
F","{GRN}GREEN
"
```

# Shoot The Rapids

Journey down a winding river in your kayak. The farther you go, the more treacherous the river. This fast-paced game requires concentration and skill. Use a joystick or the < and > keys (unshifted) to paddle safely down the raging river. You'll hear a beep each time the river narrows.

If you crash, your score is displayed along with commentary. Press any key to play again or RUN/STOP to quit.

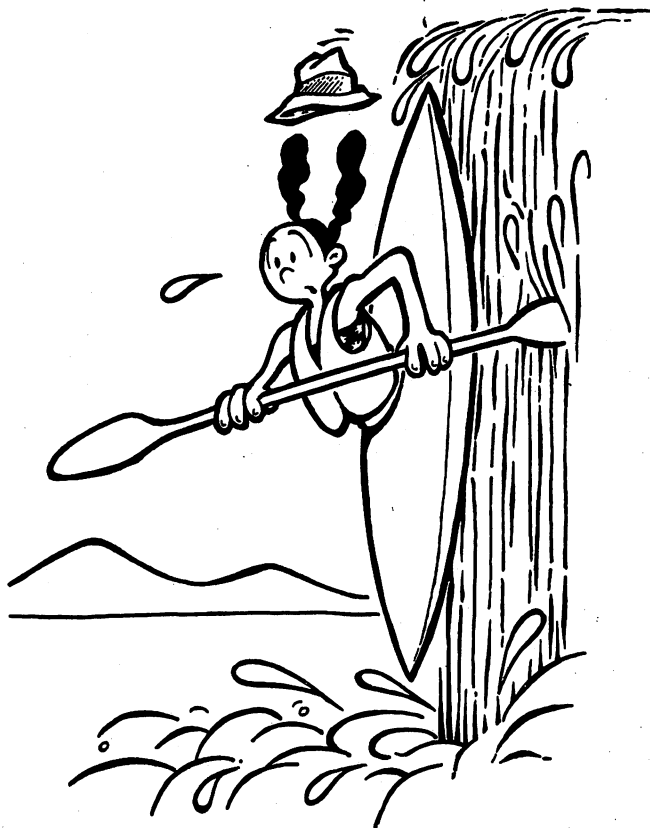
**Alteration**—For a shorter, and quieter, version, leave out the introductory music of lines 30-160. The game will play the same. Remember to number remaining lines as shown so **GOSUB** and **GOTO** statements still work.

```

10 REM SHOOT RAPIDS
20 SCNCLR
30 TEMPO 16:REM WALTZ IN C BY CARCASSI
40 PLAY "V104T5U8X0":REM V1=GUITAR
50 PLAY "V204T5U8X0":REM V2=GUITAR
60 PLAY "V304T5U8X0":REM V3=GUITAR
70 A$="V103QG02.HC V204IRIEICIE V103QG"
80 B$="V103.HG V204IRIEICIE V103QG"
90 C$="V103.HD V204IRIFIBIF V103QG"

```

MORE →



**Programming Note**—The blank part of line 190 is equal to 9 spaces.

```

100 D$="V102.HG V204IRIFIBIF V103QG"
110 E$="V103.HC V204IRIEICIE V103QG"
120 F$="V102.HA V204IRIEICIE V103QA"
130 G$="V103.HD V204IRI#FICI#F V103QA"
140 H$="V102HGV204HGV303HB"
150 PLAY A$:PLAY B$: PLAY C$: PLAY D$
160 PLAY E$:PLAY F$: PLAY G$: PLAY H$
170 COLOR0,2:COLOR4,6:VOL15
180 SC$="{HOME}{C/DN}" + CHR$(27) + "I"
190 R$="{BLUE}{RVON} " : N=100: KY=
158: LL=2
200 KS=212: RT=44: LT=47: D=0: V=0: A=.4: B=.6
210 L=1924: LD=40: CO=39: BL=160: R=16: UL=28
220 PRINT "{CLR}" TAB(10) "{RED}{RVON}SHOOT
THE RAPIDS!!!"
230 PRINT "{C/DN}{C/DN}YOU ARE ABOUT TO S
HOOT THE RAPIDS IN": PRINT "YOUR KAYAK."
240 PRINT "{C/DN}CONTROL YOUR PADDLES WIT
H THE COMMA AND"
250 PRINT "PERIOD KEYS--THINK OF THEM AS
< AND >."
260 PRINT "{C/DN}SHOOT A FAST OR A SLOW R
IVER (F/S)? ";
270 GETKEYQ$: IFQ$<>"F"ANDQ$<>"S"THEN270:
ELSEPRINTQ$: IFQ$="S"THENV=1
280 PRINT "{C/DN}KEEP BETWEEN THE RIVERBA
NKS AND BE"
290 PRINT "CAREFUL--WHEN THE BEEP SOUNDS,
THE": PRINT "RIVER NARROWS!"
300 PRINT "{C/DN}HIT ANY KEY TO START": GE
TKEYQ$
310 REM PRINT SCREEN
320 PRINT "{CLR}": COLOR0,14
330 FORX=1TO23: PRINTTAB(RND(1)*CO) "{GRN}*"
*: PRINT "{C/UP}" TAB(R)R$: NEXT
340 SOUND1,0,0: SOUND1,30000,4000,2,30000
,0,3
350 REM START LOOP
360 IFVTHENFORI=1TO200:NEXT
370 K=RND(1): IFK>ATHEN400
380 IFR>LLTHENR=R-1
390 GOTO420
400 IFK<BTHEN420
410 IFR<ULTHENR=R+1
420 PRINTSC$: TAB(RND(1)*CO) "{GRN}*"
430 PRINT "{C/UP}" TAB(R)R$: POKEL+LD, BL
440 P=PEEK(KS): IFP=LTTHENL=L-1: GOTO460
450 IFP=RTTHENL=L+1
460 IFPEEK(L)<>BLTHEN520
470 POKEL, KY: D=D+1: IFD>HSTHENHS=D
480 PRINT "{HOME}{BLK}SCORE: "D"{C/LF} HI
GH: "HS"{C/LF} "

```

**Alteration**—To change the sound of the beep, experiment with numerical values in the **SOUND2** statement of line 500.

**Alteration**—Change the commentary in lines 570 to 600 to personalize them.

```

490 CT=CT+1
500 IFCT=NTHENR$=LEFT$(R$,LEN(R$)-1):CT=
0:SOUND2,40000,10,0,0,0,1:GOTO340
510 GOTO360
520 REM CRASH
530 POKEL,90:COLOR4,3
540 FORI=15TO0STEP-.03:VOLI:NEXT:SOUND1,
0,0
550 PRINT"{CLR}{BLK}SCORE:"STR$(INT(D))+
" "
560 IFD>HSTHENHS=D
570 IFD<100THENPRINT"I THINK YOUR KAYAK
HAS A LEAK.":GOTO630
580 IFD<200THENPRINT"YOUR PADDLE MUST HA
VE BROKEN.":GOTO630
590 IFD<300THENPRINT"SNAGGED A TREE LIMB
?":GOTO630
600 IFD<400THENPRINT"I SEE YOU HAVE DONE
THIS BEFORE.":GOTO630
610 IFD<500THENPRINT"YOU MUST BE PART OT
TER!":GOTO630
620 PRINT"INCREDIBLE PERFORMANCE!!"
630 PRINT"{C/DN}HIT ANY KEY TO RESTART (
STOP TO EXIT)"
640 FORI=1TO10:GETQ$:NEXT:GETKEYQ$:GOTO1
70

```

# Night Sky

Yikes! Out of the night sky come alien ships on a collision course with you! You get flight control as you view out into space. Use a joystick to focus your lasers on the alien attackers. You must hit each attacker five times to eliminate it. Warning! Each alien comes at you faster than the previous one.

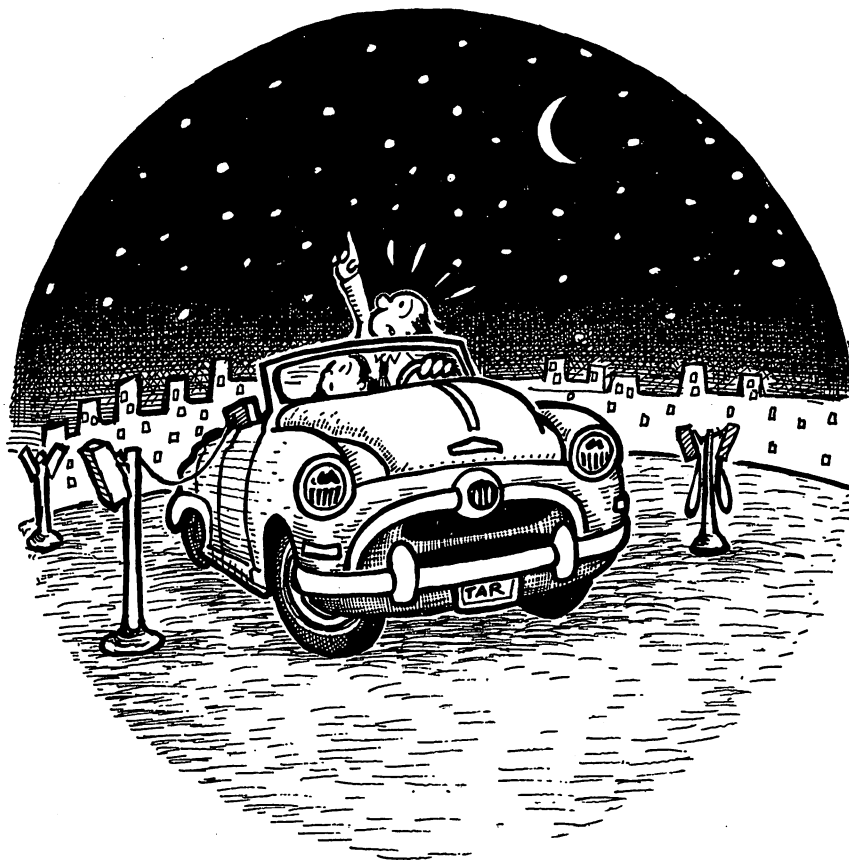
**Alteration**—Change the value of the number following T in line 40 to another number from 1 to 9. This changes the instrument playing the music.

**Alteration**—To change the difficulty, change the starting range for the invaders—variable RA in line 90.

```

10 REM NIGHT SKY
20 SCNCLR
30 TEMPO 8:REM SPACE MUSIC
40 PLAY "V104T5U8X0":REM V1=GUITAR
50 A$="V103QCHGSCSCSCQAHG"
60 B$="V103SCSCSCQAHGSESEHD"
70 PLAY A$:PLAY B$:PLAY A$:PLAY B$
80 REM NIGHT SKY
90 GOSUB660:RA=9000:X=RND(0):S=1
100 COLOR1,2:COLOR0,1:COLOR4,1
110 GRAPHIC1,1:FORI=1TO100:X=RND(1)*320:
Y=RND(1)*200:DRAW1,X,Y:NEXT

```



**Alteration**—To make the aliens more evasive, change line 230 to 230 MOVSPR S, +(INT(RND(1)\*12)-6), +(INT(RND(1)\*12)-6)

**Alteration**—Make your steering ability a bit faster by changing the value 3 in lines 270-340 to the value 4. Don't change the minus signs.

```

120 FORX=1TO3:BOX1,80-X*10,60-X*8,240+X*
10,120+X*10:NEXT
130 BOX1,0,0,319,199
140 DRAW1,0,0 TO 70,52:DRAW1,0,199 TO 70
,130
150 DRAW1,319,0 TO 250,52:DRAW1,319,199
TO 250,130
160 COLOR1,6:CIRCLE1,160,90,20,15
170 CIRCLE1,160,90,8,6
180 DRAW1,160,73 TO 160,107
190 DRAW1,138,90 TO 182,90
200 MOVSPR8,171,130:SPRITES,1
210 MOVSPR S,(RND(1)*305+20),(RND(1)*180
+50):SPRITES,1:COLOR1,5
220 REM START LOOP
230 MOVSPR S,+(INT(RND(1)*8)-4),+(INT(RN
D(1)*8)-4)
240 CHAR1,3,0,"SHIPS="+STR$(SH)+" RANGE
="+STR$(RA)+" SCORE="+STR$(SC)
250 DX=0:DY=0:ONJOY(2)AND127GOTO270,280,
290,300,310,320,330,340
260 GOTO350
270 DY=-3:GOTO350
280 DY=-3:DX=-3:GOTO350
290 DX=-3:GOTO350
300 DY=3:DX=-3:GOTO350
310 DY=3:GOTO350
320 DY=3:DX=3:GOTO350
330 DX=3:GOTO350
340 DX=3:DY=-3:GOTO350
350 MOVSPR S,+DX,+DY
360 IF HD>0THENHD=HD-1:GOTO380
370 X=BUMP(1):IFJOY(2)AND128THEN SOUND1,
30000,15,1,15000,1000:HD=2:GOSUB450
380 IFH=5THENGOTO580
390 RA=RA-(5*SH+10):IFRA>9000-1500*STHEN
230
400 IFS=6THEN520
410 MOVSPR(S+1),RSPP0S(S,0),RSPP0S(S,1)
420 SPRITES,0:S=S+1:SPRITES,1
430 GOTO230
440 REM HIT 'EM
450 IFBUMP(1)=0THENRETURN
460 SPRITES,1,3:H=H+1:SC=SC+125
470 SOUND2,30000,30,1,20000,800,3
480 HX=RND(1)*70-35:HY=RND(1)*40-20
490 FORX=1TO4:MOVSPRS,+HX,+HY:FORY=1TO20
:NEXTY,X
500 SPRITES,1,4:RETURN
510 REM CRASH
520 SOUND2,30000,200,1,10000,100,3

```

MORE →

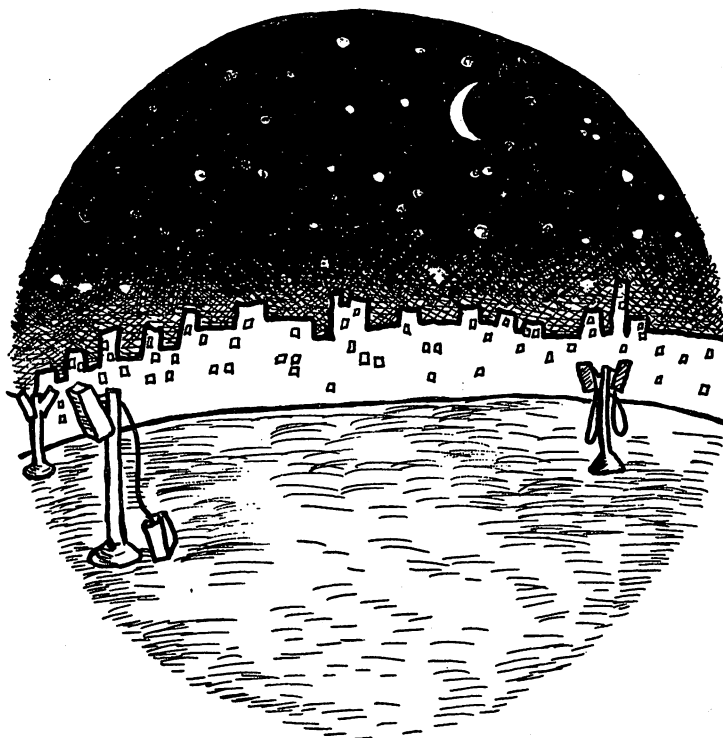
**Alteration**—To deal with fewer than 10 ships, change the 10 in line 600 to a smaller number, such as 5.

```

530 GRAPHIC0,1:FORX=5TO19:FORY=1TO50:NEX
T:COLOR0,8:FORY=1TO50:NEXT:COLOR0,3
540 CHAR1,13,X,"{WHT}***CRASH***":NEXT
550 SPRITES,0:SPRITE8,0
560 PRINT"{HOME}YOUR FINAL SCORE WAS"SC:
PRINT"AND YOU GOT"SH"SHIPS.":GOTO630
570 REM GOT 'EM
580 COLOR4,2:SOUND2,30000,100,1,10000,20
0,3:SPRITES,0
590 SLEEP1:COLOR4,1:SH=SH+1:S=1:H=0:RA=9
000
600 IFSH<10THENSLEEP2:GOTO210
610 GRAPHIC0,1:COLOR4,6:SPRITE8,0
620 FORX=5TO19:CHAR1,8,X,"YOU'VE SAVED T
HE EARTH!!!":NEXT
630 CHAR1,0,22,"PLAY AGAIN (Y/N)?"
640 GETKEYQ$:IFQ$="Y"THENRUN:ELSEIFQ$<>"
N"THEN640
650 END
660 PRINT"{CLR}{WHT}{RVON}NIGHT SKY"
670 PRINT"{C/DN}YOU ARE ABOUT TO PROTECT
THE NIGHT SKY"
680 PRINT"FROM KAMIKAZE INVADERS. YOU MU
ST HIT AN"
690 PRINT"INVADER FIVE TIMES TO DESTROY
IT AND YOU"
700 PRINT"MUST DESTROY TEN SHIPS TO WIN.
"
710 PRINT"{C/DN}PRESS THE FIRE BUTTON TO
FIRE LASERS."
720 PRINT"STEER YOUR SHIP WITH JOYSTICK
#2."
730 PRINT"PULL BACK IF ENEMY IS ABOVE YO
UR SITES,"
740 PRINT"PUSH FORWARD IF ENEMY IS BELOW
."
750 PRINT"{C/DN}BE CAREFUL... EACH ENEMY
SHIP COMES IN"
760 PRINT"FASTER THAN THE LAST!"
770 PRINT"{C/DN}GOOD LUCK."
780 PRINT"{C/DN}HIT ANY KEY TO START.":G
ETKEYQ$
790 REM INVADERS
800 COLOR 0,1:COLOR 4,1
810 GRAPHIC 1,1
820 DRAW1,9,8TO9,11:DRAW1,14,8TO14,11
830 BOX1,11,9,12,10:SSHAPEA$,0,0,23,21
840 SPRSAV A$,1:SPRITE1,0,4,1
850 SPRSAVA$,2:SPRITE 2,0,4,1,1,1
860 SCNCLR
870 BOX1,3,4,4,14:BOX1,19,4,20,14
880 BOX1,5,9,18,10:BOX1,8,6,15,11,0,1

```

```
890 BOX0,9,7,10,8:BOX0,13,7,14,8
900 SSHAPE A#,0,0,23,21
910 SPRSAV A#,3:SPRITE3,0,4,1
920 SPRSAV A#,5:SPRITE5,0,4,1,1,1
930 SCNCLR
940 BOX1,0,1,2,15,0,1:BOX1,21,2,23,15,0,
1
950 BOX1,3,8,20,10,0,1:BOX1,7,4,16,11,0,
1
960 CIRCLE0,9,7,1,1:PAINT0,9,7
970 CIRCLE0,14,7,1,1:PAINT0,14,7
980 SSHAPE A#,0,0,23,21
990 SPRSAV A#,4:SPRITE4,0,4,1
1000 SPRSAV A#,6:SPRITE6,0,4,1,1,1
1010 SCNCLR
1020 CIRCLE1,13,10,1,1,0,0,0,5:SSHAPEE#,
0,0,23,21
1030 SPRSAVE#,8:SPRITE8,0,6:RETURN
```



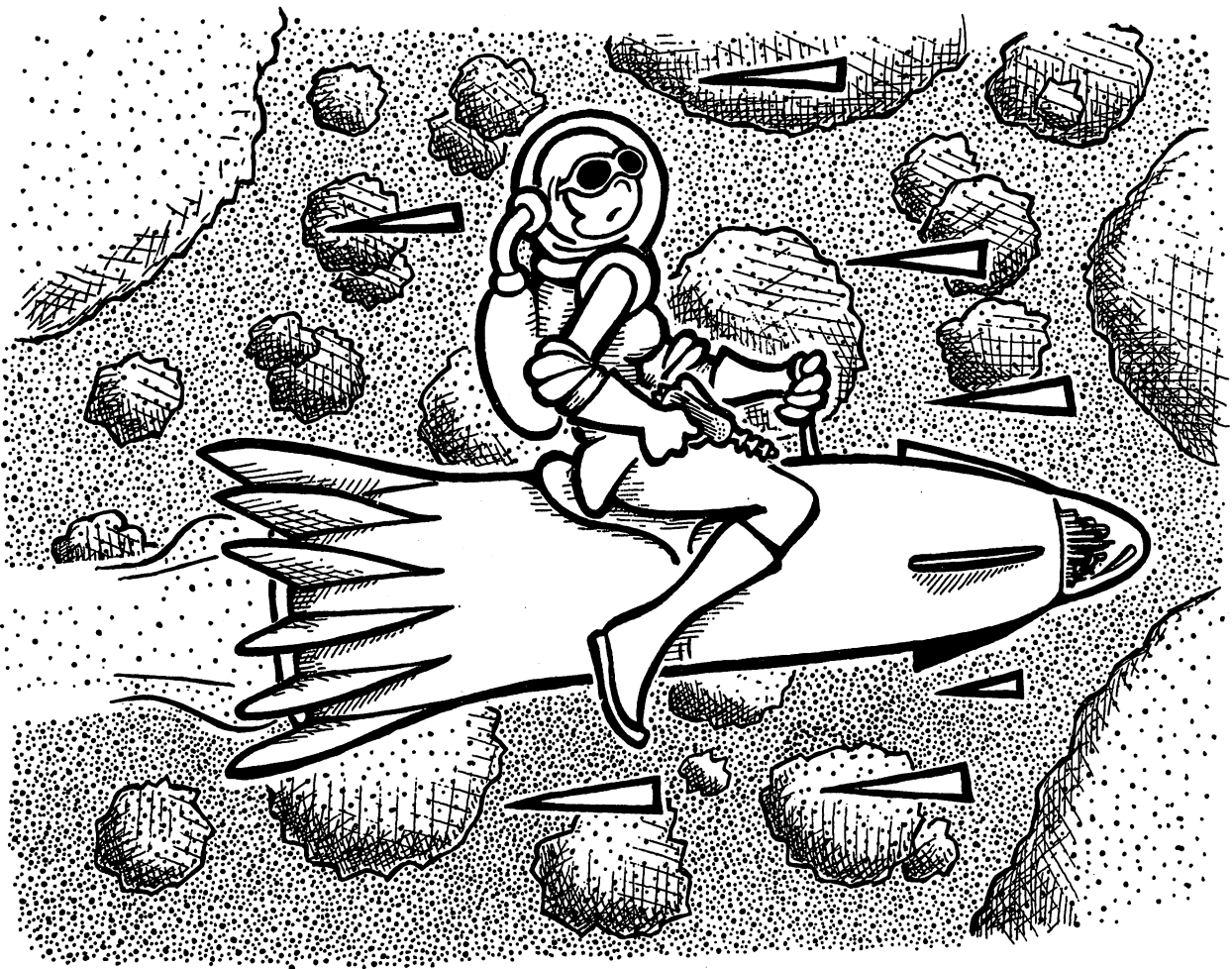
# Space Maneuvers

You're the pilot of a spaceship on a secret mission, traveling through crowded space traffic. To score, avoid collisions with asteroids, mercenary drones and dangerous enemy spacecraft. The deeper you penetrate space, the more difficult your task! Use your < and > keys (unshifted) to maneuver left and right. Saving the galaxy requires 600 points.

**Programming Tip**—Variable `SC$` in line 40 provides for downward scrolling. This is just one of many ways to do it with the Commodore 128.

**Programming Note**—Make the graphic characters in line 70 by typing `COMMODORE-*` and `SHIFT-£`.

```
10 REM SPACE MANEUVERS
20 GOTO270
30 L=1924:KS=212:RT=44:LT=47
40 SC$="{HOME}{C/DN}" + CHR$(27) + "I"
50 PRINT "{CLR}{WHT}": COLOR4,1:COLOR0,1
60 PRINTSC$;TAB(INT(RND(1)*33))"O"O"
70 IFP>100ANDRND(1)>.8THENPRINT"{C/UP}"T
  AB(RND(1)*38)"▼"
80 IFP>300ANDRND(1)>.9THENPRINT"{C/UP}"T
  AB(RND(1)*37)"▼▼"
```



**Programming Note**—Make the graphic characters in line 80 as in line 70, except you type SHIFT-Z between the symbols of line 70.

**Alteration**—Experiment with different graphic characters in lines 70 and 80 to create different spaceships.

**Alteration**—To increase the number of spacecraft and make the game more difficult, decrease .8 in line 70 or .9 in line 80.

**Programming Note**—Compare the way objects are placed at the top of the screen in this program (lines 60-80) to the methods used in *Shoot The Rapids* or *Le Mans*. Which do you prefer?

```

90 P=P+1:IFP>599THEN230
100 PRINT"{HOME}SCORE:"P
110 M=PEEK(KS):POKEL+40,32
120 IFM=LTTHENIFL<1943THENL=L-1
130 IFM=RTTHENIFL>1904THENL=L+1
140 IFPEEK(L)<>32THEN160
150 POKEL,65:GOTO60
160 SOUND1,20000,2000,1,10000,5,3
170 FORX=15TO0STEP-.1:VOLX
180 SCNLCL
190 CHAR 1,15,12,"***CRASH***",0:GOTO
240
200 IFF=1THENCOLOR4,8:F=0:GOTO220
210 IFF=0THENCOLOR4,3:F=1
220 NEXT:SOUND1,0,0
230 CHAR 1,10,12,"THE GALAXY IS SAVED!"
240 CHAR 1,2,14,"HIT ANY KEY TO RESTART
(STOP TO QUIT)"
250 CHAR 1,16,16,"SCORE =":PRINT P
260 FORX=1TO10:GETQ$:NEXT:GETKEYQ$:RUN
270 PRINT"{CLR}":PRINT"PREPARE FOR A JOU
RNEY THROUGH SPACE."
280 PRINT"AVOID ASTEROIDS, DRONES, AND S
PACESHIPS."
290 PRINT"USE THE COMMA AND PERIOD KEYS
(THINK OF"
300 PRINT"THEM AS < & > ) TO MOVE LEFT A
ND RIGHT."
310 PRINT"{C/DN}HIT ANY KEY TO RESTART"
320 GETKEYQ$:GOTO30

```

# Missile Defense

You must save your cities from incoming enemy missiles. Use your joystick to move your laser sight (+) and press the fire button to fire your laser. The game features five levels of difficulty to keep you challenged. You must be quick and accurate to survive.

```
10 REM MISSILE DEFENSE
20 FORX=1TO7:READ D(X):NEXT
30 DATA -4,4,-3,3,-2,2,-1
40 GOSUB590
50 COLOR1,1:FORX=1TO4:GSHAPE CT#,X*75-45
  ,144:NEXT
60 FORX=1TO3:SPRITE X,1:NEXT:C=4
70 REM START LOOP
80 FORX=1TONM:MOVSPRX,+D(X),+1
90 SX=RSPP0S(X,0):SY=RSPP0S(X,1)
100 IFSY>218THENGOSUB390
```



**Programming Tip**—Lines 150 and 160 read the joystick then branch to lines 180-250 to move the laser sight.

**Alteration**—Increase values 5 and 6 to larger numbers in lines 180-250 to make it easier to move your laser sight. Decrease those numbers for a more challenging game. Don't change plus or minus signs.

```

110 IFSX<16 THEN MOVSPRX,335,SY
120 IFSX>335 THEN MOVSPRX,16,SY
130 NEXT
140 REM CHECK FOR FIRING
150 J=JOY(2):IF(JAND128)THENJ=J-128:GOSU
B510
160 ON J GOTO 180,190,200,210,220,230,24
0,250
170 GOTO260
180 MOVSPR8,+0,-6:GOTO260
190 MOVSPR8,+5,-5:GOTO260
200 MOVSPR8,+6,+0:GOTO260
210 MOVSPR8,+5,+5:GOTO260
220 MOVSPR8,+0,+6:GOTO260
230 MOVSPR8,-5,+5:GOTO260
240 MOVSPR8,-6,+0:GOTO260
250 MOVSPR8,-5,-5:GOTO260
260 CHAR1,0,0," SCORE:"+STR$(SC):CHAR1,0
,1,"CITIES:"+STR$(C)
270 IFC<10RSC>5000THEN290:ELSE80
280 REM GAME OVER
290 GRAPHIC0,1:FORX=1TO8:SPRITE X,0:NEXT
300 FORY=5TO18
310 IFSC>5000THEN CHAR1,8,Y,"***CITIES
ARE SAFE ***":GOTO330
320 CHAR1,8,Y,"***CITIES DESTROYED***"
330 NEXT
340 SLEEP2:CHAR1,10,20,"FINAL SCORE:"+ST
R$(SC)
350 CHAR1,1,22,"PLAY AGAIN (Y/N)?"
360 GETKEYQ$:IFQ$="Y"THENRUN:ELSEIFQ$<>"
N"THEN360
370 END
380 REM EXPLODE CITY
390 BX=RSPPPOS(X,0)
400 MOVSPRX,INT(RND(1)*150+101),0
410 CX=0:IFBX>38THENIFBX<85THENCX=1
420 IFBX>113THENIFBX<160THENCX=2
430 IFBX>188THENIFBX<235THENCX=3
440 IFBX>263THENIFBX<310THENCX=4
450 IFCX=0THEN490
460 IFC(CX)=1THEN490
470 GSHAPE E2$,CX*75-45,144:SOUND1,1000,
100,0,0,0,3:C=C-1
480 GSHAPE B2$,CX*75-45,144
490 C(CX)=1:RETURN
500 REM EXPLODE BOMB
510 SOUND2,20000,10,1,10000,1000
520 FORW=1TO7
530 IFABS((RSPPPOS(W,0)+5)-RSPPPOS(8,0))>4
THEN570

```

MORE →

**Alteration**—Increase the points scored for destroying a missile by increasing the value of 125 in line 560.

**Programming Note**—Make the graphic character in line 690 by typing SHIFT-Z two times.

```
540 IFABS(RSPPOS(W,1)-RSPPOS(8,1))>4THEN
570
550 COLOR4,2:MOVSPRW,INT(RND(1)*350),0
560 SOUND1,2000,50,0,0,0,3:SC=SC+125:W=7
570 NEXT:COLOR4,1:RETURN
580 REM INTRO
590 PRINT"{CLR}"TAB(13);"{RVON}MISSILE D
EFENSE":PRINT"{C/DN}YOU MUST PREVENT THE
  CITIES FROM BEING"
600 PRINT"DESTROYED.":PRINT"{C/DN}MOVE Y
OUR LASER SITE WITH JOYSTICK #2"
610 PRINT"AND PRESS THE FIRE BUTTON SHOO
T MISSILE."
620 PRINT"{C/DN}{C/DN}DIFFICULTY LEVEL (
1-5)?";
630 GETKEYQ$:IFQ$<"1"ORQ$>"5"THEN630
640 PRINTQ$:NM=INT(VAL(Q$)*1.45)
650 PRINT"{C/DN}{C/DN}HIT ANY KEY TO STA
RT"
660 GETKEYQ$:PRINT"{CLR}"
670 REM DRAW INTERCEPTOR
680 COLOR 0,4:COLOR 4,1:COLOR5,7:GRAPHIC
1,1
690 SCNCLR:CHAR1,0,0,"◆◆"
700 SSHAPEA#,0,0,23,21
710 FORX=1TO7:SPRSAY A#,X:SPRITE X,1,3:M
OVSPR X,INT(RND(1)*350),0:NEXT
720 SCNCLR
730 CHAR1,0,0,"+"
740 SSHAPE A#,0,0,23,21:SPRSAY A#,8
```

**Programming Note**—Make the graphic character in line 770 by typing SHIFT-B.

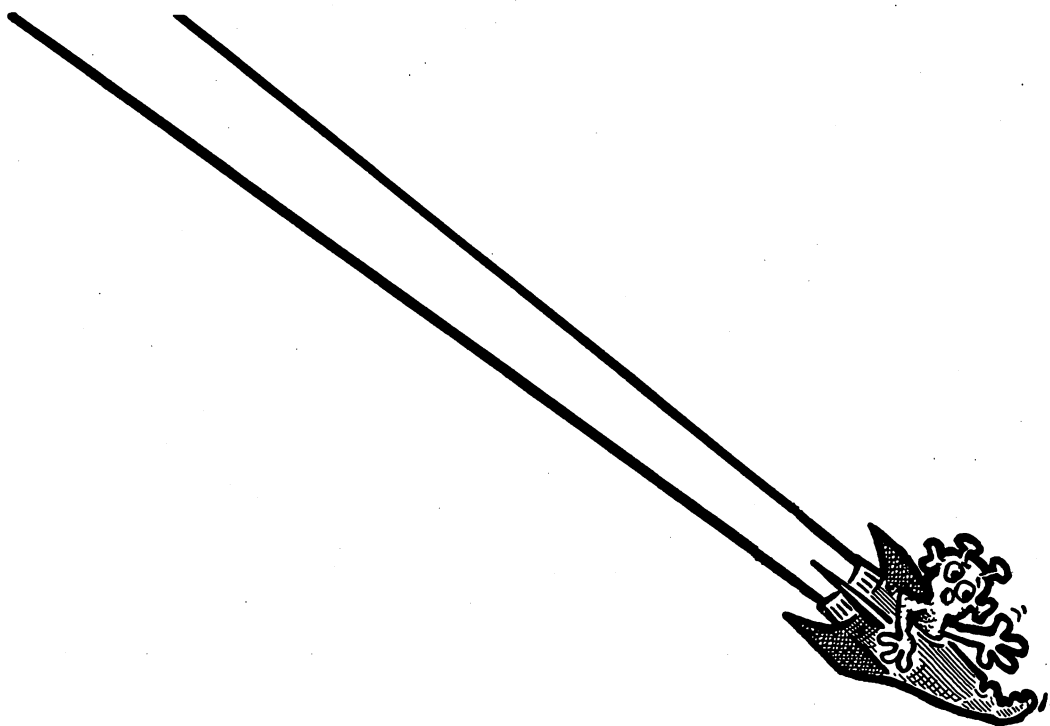
**Programming Note**—Make the graphic character in line 780 by typing COMMODORE-K.

**Programming Note**—Make the first graphic character in line 790 by typing COMMODORE-U. Make the second by typing COMMODORE-T.

```

750 SPRITE8,1,1:MOVSPR8,160,80
760 SCNCLR:SSHAPE B2$,0,0,33,33:COLOR1,1
770 CHAR1,0,1," I"
780 CHAR1,1,2," ",1:CHAR1,3,2," "
790 CHAR1,0,3,"- = ",1
800 SSHAPE CT$,0,0,33,31
810 SCNCLR:COLOR1,12
820 CIRCLE1,16,8,16,7:PAINT1,16,8
830 FORX=0TO10:DRAW1,11+X,5 TO (3*X)+2,3
2:NEXT
840 SSHAPE E2$,0,0,33,31
850 SCNCLR:COLOR1,8
860 COLOR1,6:BOX1,0,176,319,199,0,1
870 RETURN

```



# Wall Bangers

It's you against the computer as you both try to trap each other by building electrified walls. If you run into the computer's wall or the screen border, you get electrocuted, and vice-versa.

Use a joystick to move up, down, left or right. The cursor keys will work too, but the game as written is really too fast for them.

This game features five levels of difficulty. This way, you can easily adapt the game to any skill level. Good luck!

**Alteration**—Change the second number in the **COLOR** statements of line 20 to change the color of the background (**COLOR 0**) and the border (**COLOR 4**). Use values from 1 to 16.

**Alteration**—You can easily add music to the game by adding music from another game in the book. For example, copy lines 60-120 from *Hangman* and renumber and insert them as lines 21-27 to play *The Streets of Laredo* each time you start *Wall Bangers*.

```

10 REM WALL BANGERS
20 COLOR0,1:COLOR4,7
30 PRINT"{CLR}{WHT}YOU (O) WILL TRY TO B
   UILD AN ELECTRIFIED":PRINT"WALL AROUND M
   E (*). I WILL TRY TO DO"
40 PRINT"THE SAME TO YOU.":PRINT"{C/DN}Y
   OU CANNOT CROSS A WALL WITHOUT GETTING Z
   APPED."
50 PRINT"{C/DN}JOYSTICK #2 OR CURSOR KEY
   S (J/K)?
60 GETKEYV$:IFV$<>"J"ANDV$<>"K"THEN60:EL
   SEV=ASC(V$)-74
70 PRINT"{C/DN}HOW FAST ARE YOU (1-5)?"
80 GETKEYQ$:IFQ$<"1"ORQ$>"5"THEN80:ELSE
   E=(5-VAL(Q$))*30+1
90 D(0)=-40:D(1)=-1:D(2)=1:D(3)=40
100 PRINT"{CLR}":FORX=1024TO1063:POKEX,1
   60:POKEX+960,160:NEXT
110 FORX=1064TO1944STEP40:POKEX,160:POKE
   X+39,160:NEXT
120 P=1924:D=-40:C=1124:DC=3:K$="{C/UP}{
   C/RT}{C/DN}{C/LF}"
130 IFVTHEN150
140 ON JOY(2)+1 GOTO200,160,200,170,200,
   180,200,190,200
150 GETQ$:ON INSTR(K$,Q$,1)+1 GOTO200,16
   0,170,180,190
160 D=-40:GOTO200
170 D=1:GOTO200
180 D=40:GOTO200
190 D=-1:GOTO200
200 SOUND1,3000,1,0,3000,1,3
210 IFPEEK(P+D)<>32THEN340
220 P=P+D:POKEP,87
230 IFRND(1)>.95THENDC=RND(1)*4
240 IFPEEK(C+D(DC))=32THEN310
250 IFRND(1)>.5THEN280
260 FORX=0TO3:IFPEEK(C+D(X))=32THENDC=X:
   X=3
270 NEXT:GOTO300

```



```
280 FORX=3TO0STEP-1:IFPEEK(C+D(X))=32THE  
NDC=X:X=0  
290 NEXT  
300 IFPEEK(C+D(DC))<>32THEN330  
310 C=C+D(DC):POKEC,42  
320 FORX=1TODE:NEXT:GOTO130  
330 COLOR4,6:M$="**YOU GOT ME**":GOTO350  
340 COLOR4,3:M$="YOU GOT ZAPPED"  
350 PRINT"{HOME}"TAB(13);M$:SLEEP4  
360 PRINT"{CLR}{C/DN}"TAB(13);M$:COLOR4,  
7  
370 PRINT"{C/DN}PLAY AGAIN (Y/N)?"  
380 GETKEYQ$:IFQ$="Y"THEN20  
390 IFQ$<>"N"THEN380
```

# Rear Gunner

Take your place in the rear gunner's seat of an intergalactic starfighter and take on incoming rounds of alien educators. They shoot letters or words at you faster than a speeding asteroid. Score points by typing in the same letters or words in time to block the aliens.

You have the choice of facing single letters or whole words and a choice of five levels of difficulty. When you master this game, you will have also mastered the keyboard.

**Alteration**—To practice typing BASIC 7.0 words, substitute the keywords from your Commodore 128 manual into the vocabulary.

```
10 REM REAR GUNNER
20 DIMW$(46),L$(46)
30 COLOR4,7:COLOR0,1:COLOR1,2
40 PRINT"{CLR}YOU ARE ABOUT TO TAKE YOUR
  PLACE IN":PRINT"THE TAILGUNNER POSITION
  ."
50 PRINT"SHOOT DOWN THE LETTERS FOR POIN
  TS BY"
60 PRINT"TYPING THEM ON THE KEYBOARD."
70 PRINT"{C/DN}YOU WILL HAVE ONLY A SHOR
  T TIME TO TYPE"
80 PRINT"EACH ONE."
90 PRINT"{C/DN}YOU MAY SHOOT SINGLE {RVO
  N}L{RVOF}ETTERS OR"
100 PRINT"ENTIRE {RVON}W{RVOF}ORDS, WHIC
  H DO YOU WANT (L/W)?"
```



```

110 GETKEYV$:IFV$<>"L"ANDV$<>"W"THEN110
120 PRINT"{C/DN}AND HOW FAST ARE YOU (1-5)?"
130 GETKEYQ$:IFQ$<"1"ANDQ$>"5"THEN130
140 SP=VAL(Q$)
150 PRINT"{C/DN}OKAY, JUST TYPE WHATEVER YOU SEE AS":PRINT"FAST AS YOU CAN!":SLEEP2
160 FORX=1TO46:READW$(X):NEXT
170 FORX=1TO26:L$(X)=CHR$(X+64):NEXT
180 FORX=0TO9:L$(X+27)=CHR$(X+48):NEXT
190 GRAPHIC1,1
200 FORI=1TO50:X=RND(1)*320:Y=RND(1)*200:DRAW1,X,Y:NEXT
210 COLOR1,11:FORI=1TO20:X=RND(1)*320:Y=RND(1)*200:DRAW1,X,Y:NEXT
220 COLOR1,7:FORI=1TO20:X=RND(1)*320:Y=RND(1)*200:DRAW1,X,Y:NEXT
230 COLOR1,2:BOX1,0,0,319,199
240 BOX1,100,90,220,110
250 DRAW1,0,0 TO 100,90
260 DRAW1,0,199 TO 100,110
270 DRAW1,319,0 TO 220,90
280 DRAW1,319,199 TO 220,110
290 REM START LOOP
300 FORC=1TO25
310 COLOR1,5:CHAR1,15,0,"SCORE =" +STR$(SC),1
320 R=RND(1)*46+1
330 IFV$="W"THENS$=W$(R):ELSES$=L$(R)
340 TB=20-LEN(S$)/2
350 CHAR1,TB,12,S$:POKE(208),0
360 TL=LEN(S$)*(410-SP*80):L=0:T=TI
370 DO UNTIL(LEN(S$)=LEN(R$)OR(TI-T)>TL)
380 GETQ$:IFQ$<"0"ORQ$>"Z"THEN410
390 SOUND1,5000,1
400 R$=R$+Q$:CHAR1,TB+L,22,Q$:L=L+1
410 LOOP
420 IFR$=S$THENSC=SC+125
430 R$=" ":CHAR1,15,22," "
440 FORX=14TO26:CHAR1,X,12," ":NEXTX,C
450 GRAPHIC0,1:CHAR1,10,10,"***GAME OVER***"
460 PRINT:PRINT"{C/DN}{C/DN}FINAL SCORE="SC
470 IFSC<=1000THENPRINT"{C/DN}MAYBE YOU NEED MORE PRACTICE.":GOTO510
480 IFSC<=2000THENPRINT"{C/DN}NOT BAD... KEEP TRYING.":GOTO510
490 IFSC<=2625THENPRINT"{C/DN}GOOD JOB! CONSIDERED BEING A SECRETARY?":GOTO510

```

MORE →

**Alteration**—For a faster game, change the value 410 in line 360 to 405. Don't make this value less than 401, or you will have no time at all.

**Programming Note**—The blank part of line 430 is equal to 8 spaces.

**Alteration**—You can change the game's vocabulary in lines 520-600. But be sure to keep the same number of words, 46 total.

```
500 PRINT"{C/DN}INCREDIBLE! YOU SHOULD T
RY A FASTER      SPEED."
510 PRINT"{C/DN}TYPE [RUN] TO RESTART.":
END
520 DATA THE,OUR,RUN,SEE,HOP,AIM
530 DATA TUG,WIN,FLY,ZOO,BOX
540 DATA HAD,SHE,HER,HUG,AIR
550 DATA DIG,DEER,IDEA,HIRE,SIDE
560 DATA RARE,FEAR,FLAG,GIFT,LIKE
570 DATA WORK,HAVE,GIVE,LOVE,HOPE
580 DATA QUICK,RIGHT,ABOUT,THINK,WRITE
590 DATA SOUND,SPORT,PLANE,CHEER,STORE
600 DATA THROUGH,RABBIT,HOLIDAY,DOLLAR,S
ECOND
```

# Le Mans

Get your helmet and racing gloves ready! You are about to negotiate the challenging track at Le Mans. In this computer simulation, you use a joystick or < and > keys (unshifted) to steer. Avoid other cars, debris and the guardrails. The better you are, the tougher the track becomes. The program lets you choose the color and number of your car.

**Programming Tip**—Variable **SC\$** in line 40 scrolls the screen downward. **CHR\$(27) + "I"** is the escape sequence that inserts one blank line.

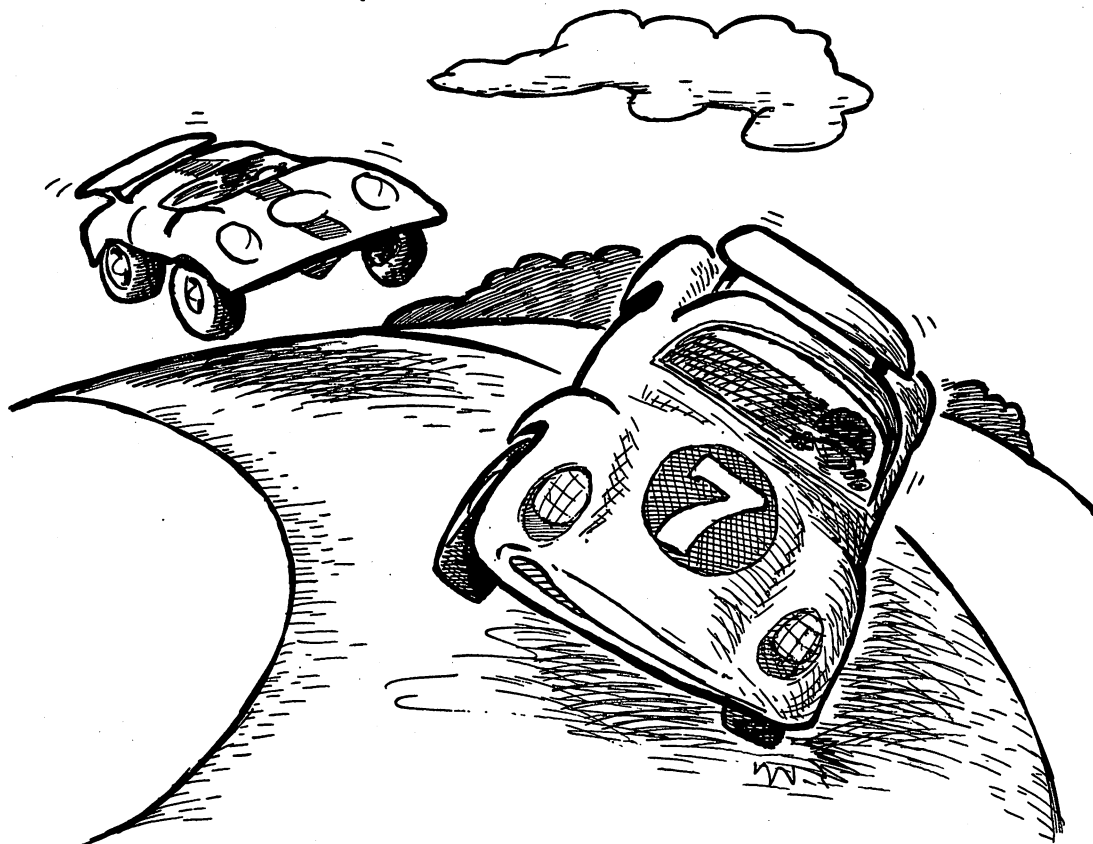
**Alteration**—For a more difficult game, start with a narrower road by changing the value of **RW** in line 50 to 9.

**Alteration**—Increase the debris in the road by increasing variables **C** and **D** in line 60. But don't increase them by much or the track is impossible to drive.

**Alteration**—To make the road wind more dramatically, increase the value of **A** and decrease the value of **B** in line 60 by exactly the same amount. The values must be less than 1.0 and greater than 0.

```
10 REM LE MANS
20 COLOR4,6:COLOR0,16
30 COLLISION2,410
40 SC$="{HOME}{C/DN}" + CHR$(27) + "I":SC=0:
   SP=0:L2=0
50 N=1:LL=2:R=16:RW=11:LL=3:UL=26:KS=212
60 RT=44:LT=47:A=.4:B=.6:C=.05:D=.05
70 PRINT"{CLR}"TAB(10)"{RED}{RVON}LE MAN
   S ROAD RALLY!!!"
80 PRINT"{C/DN}{C/DN}YOU ARE ABOUT TO RU
   N A RACE AT LE MANS"
90 PRINT"{C/DN}STEER YOUR CAR WITH THE C
   OMMA AND"
```

MORE →



```

100 PRINT"PERIOD KEYS--THINK OF THEM AS
< AND >."
110 PRINT"{C/DN}WHAT'S YOUR COLOR?":PRIN
T"1) BLACK":PRINT"2) RED":PRINT"3) GREEN
"
120 PRINT"4) BLUE":PRINT"5) YELLOW"
130 GETKEYQ$:IFQ$<"1"ORQ$>"5"THEN130:ELS
E PC=VAL(Q$)
140 IFPC=2THENPC=3:GOTO180
150 IFPC=3THENPC=6:GOTO180
160 IFPC=4THENPC=7:GOTO180
170 IFPC=5THENPC=8:GOTO180
180 PRINT"{C/DN}WHAT'S YOUR NUMBER (0-9)
?"
190 GETKEYQ$:IFQ$<"0"ORQ$>"9"THEN130:ELS
E PN=VAL(Q$)
200 PRINT"{C/DN}KEEP BETWEEN THE GUARDRA
ILS AND WATCH"
210 PRINT"FOR DEBRIS IN THE ROAD. THIS I
S A TRICKY"
220 PRINT"ROAD... IT GETS NARROWER!"
230 PRINT"{C/DN}HIT ANY KEY TO START":GE
TKEYQ$
240 GOSUB530
250 FORY=1TO23:CHAR1,16,Y,"{BLK} ",1:CHA
R1,28,Y," ",1:NEXT
260 REM START LOOP
270 SOUND1,0,0:SOUND1,SP+100,200,2,SP+80
,5,3
280 L=INT(SC/100):K=RND(1)
290 IFK<ATHENIFR>LLTHENR=R-1
300 IFK>BTHENIFR<ULTHENR=R+1
310 IFL>L2THENL2=L:IFRW>4THENRW=RW-1:SP=
SP+100
320 CHAR1,0,0,"{RVON}{PURP}LE MANS>>>{RV
OF} SCORE:"+STR$(SC)+"
330 PRINTSC$:CHAR1,R,1,"{BLK} ",1:CHAR1,
R+RW,1," ",1
340 IFK<CTHEN CHAR1,INT(RND(1)*(RW-1)+R+
1),1,"█"
350 IFK<DTHEN CHAR1,INT(RND(1)*(RW-1)+R+
1),1,"●"
360 P=PEEK(KS):IFP=LT THEN MOVSPR1,-8,+0
370 IFP=RT THEN MOVSPR1,+8,+0
380 SC=SC+1:
390 GOTO270
400 REM CRASH
410 COLOR4,3:SOUND2,4000,300,0,4000,0,3
420 FORI=15TO0STEP-.01:VOLI:NEXT:VOL15:S
PRITE1,0
430 PRINT"{CLR}{BLK}SCORE:"+STR$(SC)+"{C/D
N}"

```

**Programming Note**—Make the graphic character in line 340 by typing COMMODORE-+.

**Programming Note**—Make the graphic character in line 350 by typing SHIFT-Q.

```
440 IFSC>HSTHENHS=SC
450 IFSC<100THENPRINT"I THINK YOU FORGOT
    TO FUEL UP.":GOTO500
460 IFSC<300THENPRINT"MUST HAVE HAD A BL
    OW OUT.":GOTO500
470 IFSC<500THENPRINT"I SEE YOU HAVE DON
    E THIS BEFORE.":GOTO500
480 IFSC<700THENPRINT"GOOD JOB! INDIANAP
    OLIS HERE YOU COME.":GOTO500
490 PRINT"GREAT PERFORMANCE!! A.J. FOYT
    MOVE OVER."
500 PRINT"{C/DN}HIT ANY KEY TO RESTART O
    R [STOP] TO QUIT"
510 POKE208,0:GETKEYQ$:RUN
520 REM DRAW CAR
530 GRAPHIC1,1
540 CIRCLE1,12,14,3,4
550 PAINT1,12,14:DRAW1,16,8 TO 16,15
560 BOX1,10,3,14,8,0,1
570 BOX1,8,4,16,5,0,1
580 BOX1,6,14,8,17,0,1
590 BOX1,16,14,18,17,0,1
600 CHAR1,1,1,CHR$(PN+48),1
610 SSHAPEA$,1,1,24,22:SPRSAVA$,1
620 SCNCLR
630 SPRITE1,1,PC:MOVSPR1,180,220
640 GRAPHICO,1:RETURN
```

# Moon Lander

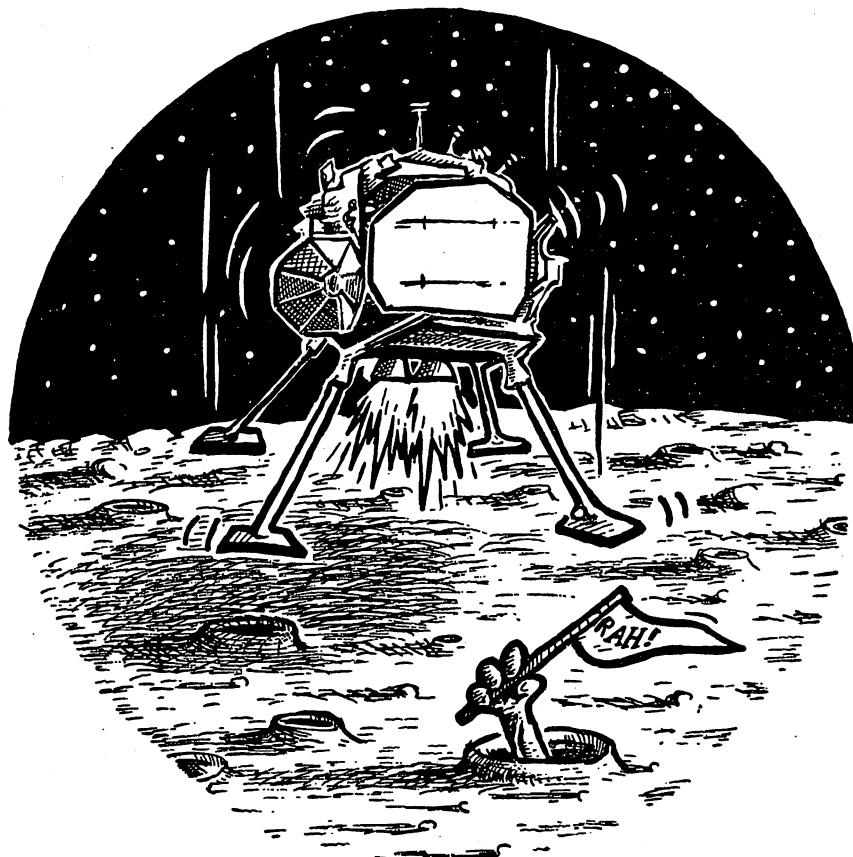
After hearing an electronic *Star Spangled Banner*, you must try to land your ship safely on the moon. Control the amount of thrust by pressing the number keys. The higher the thrust, the greater the deceleration and fuel use. If you run out of fuel, the engine won't work and the ship crashes.

To land safely, you must reach zero altitude at a rate between 0 and 5 meters per second.

```

10 REM  MOON LANDER
20 SCNCLR
30 TEMPO 12
40 PLAY"V104T5U8X0":REM GUITAR
50 A$="V103I$ESC02Q$A03QCQ$EH$A04.IC03S$
BQ$AQCQDH$EI$EI$E"
60 B$="V104.QC03I$BQ$AHGIFIFQ$AQ$AQ$EQCO
2$A"
70 PLAY A$:PLAY B$
80 GOSUB490
90 PRINT"{HOME}{WHT}ALTITUDE:{CYAN}"INT(
A)"{C/LF} ";TAB(16)"METERS"
100 PRINT"{WHT}VELOCITY:{CYAN}"INT(V)"{C
/LF} ";TAB(16)"METERS/SEC"

```



**Programming Note**—Make the graphic characters in line 130 by typing SHIFT-U, SHIFT-H, and SHIFT-J.

**Programming Note**—Make the graphic characters line 140 by typing SHIFT-I, SHIFT-K, and SHIFT-G.

**Programming Note**—Make the graphic characters in lines 220-300 by typing COMMODORE-+.

```

110 PRINT "{WHT}FUEL      : {CYAN}"F"{C/LF}
";TAB(16)"KG"
120 PRINT "{WHT}THRUST   : {CYAN}"T*100"{C/
LF}  ";TAB(16)"JLS"
130 IFQ=1THENPRINTTAB(17)" {LBLU} /":PRIN
TTAB(17)" {GRY3} KLBLU} ~":Q=0:GOTO150
140 PRINTTAB(17)" {LBLU} \  ":PRINTTAB(17)"
{LBLU} / {GRY3} I  ":Q=1
150 GETT$:IFT$<"0"ORT$>"9"THEN180
160 T=VAL(T$):Z=VAL(T$):VOLZ:SOUND1,3000
0,60,2,30000,0,3
170 IF(F-T)<1THENT=0:F=0
180 DV=V-G+(T*C)/(M+F)
190 F=F-T:A=A+(V+DV)/2:V=DV
200 PRINTF$:FORI=1TO9:PRINTTAB(17)"  ":
NEXT
210 PRINTF$:ON10-TGOTO220,230,240,250,26
0,270,280,290,300,310
220 PRINTTAB(17)" {WHT}██████"
230 PRINTTAB(17)" {RED}██{WHT}██{RED}██"
240 PRINTTAB(17)" {RED}██████"
250 PRINTTAB(17)" {RED}██████"
260 PRINTTAB(17)" {YELO}██{RED}██{YELO}██"
270 PRINTTAB(17)" {YELO}██████"
280 PRINTTAB(17)" {YELO}██████"
290 PRINTTAB(17)" {YELO}██████"
300 PRINTTAB(17)" {YELO}██████"
310 IFA>5THEN90
320 V=ABS(V):IFV<10THEN420
330 PRINT "{CLR}":VO=15
340 FORI=1TO22:PRINTTAB(14)" {WHT}****CRA
SH****":NEXT
350 SOUND1,2000,1500,2,0,0,3
360 DO UNTIL VO<.2
370 VOL VO:COLOR4,3
380 COLOR0,3:FORJ=1TO22:NEXT
390 COLOR0,8:FORJ=1TO22:NEXT
400 VO=VO-.1:LOOP
410 COLOR4,1:COLOR0,1
420 PRINTLEFT$(F$,6)" {WHT}"
430 IFV<=5THENPRINT"PERFECT LANDING!":GO
TO460
440 IFV<=10THENPRINT"HARD LANDING":GOTO4
60
450 PRINT"CRASH LANDING":IFV>15THENPRINT
"NO SURVIVORS!"
460 INPUT "{C/DN}{C/DN}PLAY AGAIN";Q$
470 IFLEFT$(Q$,1)="Y"THEN80
480 END
490 REM INTRODUCTION
500 COLOR4,1:COLOR0,1

```

MORE →

**Programming Note**—Make the graphic character in line 590 by typing SHIFT-I.

**Programming Note**—Make the graphic characters in line 600 by typing SHIFT-K, SHIFT-G, SHIFT-U, SHIFT-I.

**Programming Note**—Make the graphic characters in lines 610, 620 and 650 by typing SHIFT-£ and SHIFT-\*

**Programming Note**—Make the graphic characters in lines 680-710 by typing COMMODE-B, COMMODE-I, COMMODE-U, SHIFT-£, SHIFT-\*, COMMODE-C, and COMMODE-V.

**Alteration**—Change the starting values by changing the following variables in line 720: A is starting altitude; M is mass of spaceship without fuel; F is amount of fuel; G is gravity, which affects the rate of fall. The game as written uses a G value about what it is on Earth. Using the actual moon-gravity value of 1.62 for G slows the game down.

```

510 PRINT "{CLR}"TAB(15)"{WHT}{RVON}MOON
LANDER{RVOF}"
520 PRINT "{C/DN}{C/DN}TRY TO LAND YOUR S
HIP AT ZERO TO"
530 PRINT "FIVE METERS PER SECOND."
540 PRINT "{C/DN}PRESS KEYS 0-9 TO SET TH
RUST."
550 PRINT "{C/DN}HIT ANY KEY TO START."
560 GETKEYA$
570 F$="{HOME}{C/DN}{C/DN}{C/DN}{C/DN}{C
/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}{C/DN}
{C/DN}{C/DN}{C/DN}"
580 PRINT "{CLR}"
590 PRINT "{HOME}{C/DN}{C/DN}{C/DN}{C/DN}
"TAB(17)"{LBLU}~"
600 PRINTTAB(17)"{LBLU}{GRY3}{LRED}^
"
610 PRINTTAB(14)"{GRY3}{RVON}▀▀{RV
OF}"
620 PRINTTAB(14)"{RVON}▀{RVOF}{RVON}
{RVOF}{RVON}▀"
630 PRINTTAB(14)"{RVON}"
640 PRINTTAB(14)"{RVON}{RVOF}{RVON}
"
650 PRINTTAB(14)"▀{RVON}{RVOF}▀"
660 PRINTTAB(14)"{YELO}{RVON}"
670 PRINTTAB(14)"{RVON}{WHT}USA{YELO}
"
680 PRINTTAB(13)"{RVON}▀{RVOF}▀▀{RVON}
{RVOF}▀▀▀"
690 PRINTTAB(12)"{RVON}▀{RVOF}▀▀▀{RVON}
{GRY1}▀▀▀{RVOF}{YELO}▀▀▀"
700 PRINTTAB(11)"{RVON}▀{RVOF}
▀▀"
710 PRINTTAB(10)"▀▀{RVON}▀{RVOF}
{RVON}▀▀{RVOF}"
720 A=20000:M=8000:F=2000:G=10:V=0:T=0:C
=20000
730 RETURN

```



# Gambler

Play the one-armed bandit at the computer casino. The computer calculates payoff based on the amount bet—nickels, quarters or dollars based on the various combinations of cherries, lemons and oranges that appear. Major jackpots are awarded for three of a kind.

**Alteration**—Line 30 sets the colors C(0) to C(3) for Sprites 1 to 4. Change the colors by changing values. For example, C(0)=7 changes lemons from yellow to blue.

**Alteration**—Lines 40-110 draw the fruit-shaped sprites and the BAR. Change these if you like.

**Programming Note**—Make the graphic characters in line 100 by typing COMMODORE-P and COMMODORE-Y to match the printout here.

```

10 REM GAMBLER
20 COLOR0,16:COLOR4,13
30 C(0)=8:C(1)=11:C(2)=3:C(3)=5
40 GRAPHIC2,1:CIRCLE1,12,7,11,4
50 PAINT1,12,7:SSHAPE F$(0),1,1,24,21
60 SPRSAV F$(0),1:SCNCLR:CIRCLE1,12,7,9,
6:PAINT1,12,7:SSHAPE F$(1),1,1,24,21
70 SPRSAV F$(1),2:SCNCLR
80 CIRCLE1,7,5,4,3:PAINT1,7,5:CIRCLE1,13
,11,4,3:PAINT1,13,12
90 CIRCLE1,19,6,4,3:PAINT1,19,6:SSHAPE F
$(2),1,1,24,21:SPRSAV F$(2),3:SCNCLR
100 CHAR1,0,0,"——":CHAR1,0,1,"——"

```

MORE →



**Alteration**—Lines 210 to 340 draw the Bandit. You may wish to alter the **DRAW** statements to customize your own slot machine. For example, change the **CHAR** statement of line 340 to replace the word **BANDIT** with your lucky word or name.

```

110 SSHAPE F$(3),1,1,24,21:SPRSAY F$(3),
4:SCNCLR
120 FORX=1TO4:SPRITE$X,0,C(X-1):NEXT
130 FORX=1TO3:KEY2*X-1,CHR$(X+132):NEXT
140 KEY7,"":D=20
150 FORX=1TO14:PRINT:NEXT:PRINTCHR$(27)"
T"
160 GRAPHIC4,1,15:COLOR1,1:COLOR2,7:COLO
R3,2
170 SSHAPE DB$,115,50,128,90
180 BOX1,115,45,125,50,0,1:BOX1,121,45,1
25,80,0,1
190 CIRCLE3,123,85,5,5:PAINT3,123,85
200 SSHAPE D$,115,50,128,90:SCNCLR
210 BOX1,60,12,100,20,0,1
220 DRAW1,45,30 TO 55,20 TO 104,20 TO 11
4,30
230 DRAW1,50,30 TO 60,20 TO 99,20 TO 109
,30
240 DRAW3,51,60 TO 51,36 TO 108,36 TO 10
8,60 TO 51,60
250 BOX1,45,30,50,120,0,1:BOX1,109,30,11
4,120,0,1
260 BOX1,114,120,45,114,0,1
270 PAINT1,50,26:PAINT1,109,26
280 FORX=0TO2:BOX3,54+18*X,40,70+18*X,55
:NEXT
290 PAINT3,52,37:BOX1,52,38,108,57
300 BOX2,51,61,108,113:FORX=0TO24STEP2
310 CIRCLE2,80,87,X+2,X,0,0,0,2:NEXT:PAI
NT2,52,62
320 BOX1,121,15,125,50,0,1:BOX1,115,45,1
25,50,0,1
330 CIRCLE3,123,10,5,5:PAINT3,123,10
340 CHAR2,15,3," *BANDIT* ",1
350 SSHAPEU$,115,5,128,50
360 PRINT"{CLR}{HOME}{HOME}":FORX=1TO15:
PRINT:NEXT
370 PRINTTAB(2)"{RVON}{GRY1}F-1{RVOF} NI
CKEL"TAB(14)"{RVON}F-3{RVOF} QUARTER"TAB
(27)"{RVON}F-5{RVOF} DOLLAR"
380 PRINT"{C/DN}3 BAR> JACKPOT!"TAB(2
0)"3 ORANGE> BET X 25"
390 PRINT"3 LEMON> BET X 10"TAB(20)"3 C
HERRY> BET X 5"
400 PRINT"2 CHERRY> BET X 2"TAB(20)"1 CH
ERRY> BET X 1"
410 PRINTCHR$(27)"T":PRINT"YOU HAVE $"D
420 GETKEYQ$:IFQ$<"{F1}"ORQ$>"{F5}"THEN4
20
430 B=0:IFQ$="{F1}"THENB=.05
440 IFQ$="{F3}"THENB=.25

```

**Alteration**—Change payoffs by changing the values of variable **M** in lines 510 to 580. Be sure to change the **PRINT** statements in lines 380 to 400 appropriately.

**Programming Note**—The blank part of line 620 is equal to 10 spaces.

```

450 IFQ$="{F5}" THEN B=1
460 IFB=0 OR B>D THEN 420
470 GSHAPE DB$,115,5
480 GSHAPE D$,115,50:GOSUB 730
490 GSHAPE DB$,115,50:GSHAPE U$,115,5
500 IFW(0)<>W(1) OR W(0)<>W(2) OR W(1)<>W(2)
    THEN 550
510 IFW(0)=3 THEN M=100:GOTO 600
520 IFW(0)=2 THEN M=5:GOTO 640
530 IFW(0)=1 THEN M=25:GOTO 640
540 IFW(0)=0 THEN M=10:GOTO 640
550 CH=0:FORX=0 TO 2:IFW(X)=2 THEN CH=CH+1
560 NEXT
570 IFCH=2 THEN M=2:GOTO 640
580 IFCH=1 THEN M=1:GOTO 640
590 SLEEP 1:D=D-B:IFD>0 THEN 650:ELSE 680
600 FORX=1 TO 5:CHAR3,15,0," JACKPOT! ",1
610 FORT=1 TO 400:NEXT
620 CHAR3,15,0," "
630 FORT=1 TO 400:NEXT T,X
640 D=D+(M*B-B):PRINT "BANDIT PAID OFF $"
    B*M:SLEEP 3
650 PRINT "{CLR}{C/DN}YOU HAVE $"D
660 GSHAPE DB$,115,50:GSHAPE U$,115,5
670 FORX=5 TO 7:SPRITE X,0:NEXT:GOTO 420
680 PRINT "{CLR}{C/DN}YOU ARE BROKE!"
690 PRINT "PLAY AGAIN (Y/N)?"
700 GETKEY Q$:IFQ$="Y" THEN D=100:GOTO 650:ELSE
    IFQ$<>"N" THEN 700
710 END
720 REM SPIN BANDIT
730 FORX=0 TO 2:W(X)=INT(RND(1)*4):NEXT
740 FORX=0 TO 2
750 FORY=1 TO 4:MOV SPR Y,138+35*X,91:NEXT Y
760 MOV SPR 5+X,138+35*X,91:SPRS AV F$(W(X)),5+X
770 FORY=1 TO 10:FORZ=1 TO 4:SPRITE Z,1:FORT=
    1 TO 30:NEXT T:SPRITE Z,0:NEXT Z,Y
780 SPRITE 5+X,1,C(W(X)):NEXT X:RETURN

```

---

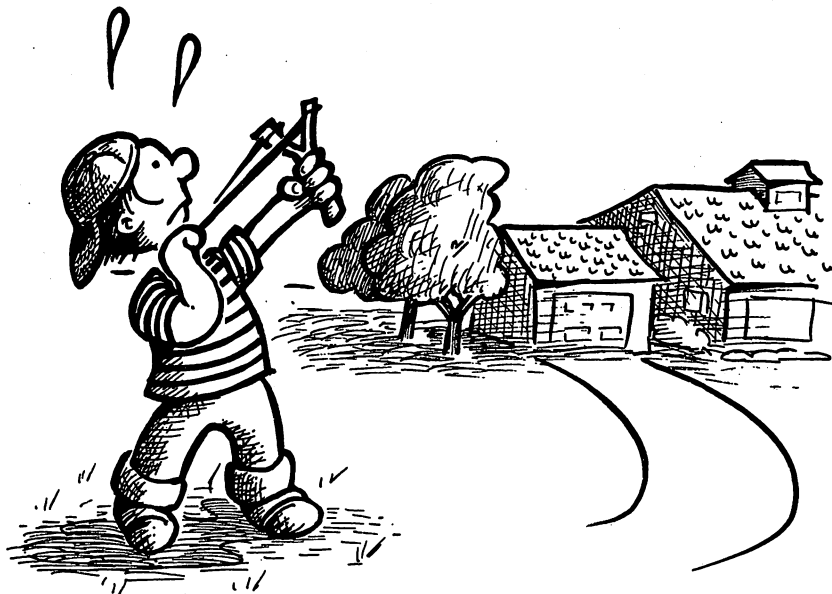
# Orion

This is your chance to be a guardian, defending the cities of Orion by shooting down invading drones. You have three missile silos. Fire your interceptor missiles at the incoming drones by pressing keys 1, 2 or 3. Once you launch a missile, you can't launch another from that silo until the missile hits a drone or reaches maximum altitude. You lose if all of your cities are destroyed.

**Alteration**—For a slightly more difficult game, change line 30 to 30 DATA -6,6,-4,4,-3

**Programming Tip**—The numbers in the DATA statement of line 30 control the angle of descent of the drones.

```
10 REM ORION
20 FORX=4TO8:READ D(X):NEXT
30 DATA -2,2,-1,1,-1
40 GOSUB560
50 COLOR1,1:FORX=1TO4:GSHAPE CT$,X*75-45
  ,144:NEXT
60 FORX=1TO3:SPRITE,X,1:NEXT
70 C=4:COLLISION1,460
80 REM START LOOP
90 FORX=4TONM+3:MOVSPRX,+D(X),+4
100 SX=RSPPPOS(X,0):SY=RSPPPOS(X,1)
110 IFSY>218THENGOSUB340
```





```

120 IFSX<16 THEN MOVSPRX,335,SY
130 IFSX>335 THEN MOVSPRX,16,SY
140 NEXT
150 REM CHECK FOR FIRING
160 GETF$:IFF$<"1"ORF$>"3"THEN180
170 MOVSPR VAL(F$),0 #3
180 FORX=1TO3
190 IFRSPPOS(X,1)<50THEN:MOVSPRX,0 #0:MO
VSPRX,X*80+5,230
200 NEXT
210 CHAR1,0,0," SCORE:"+STR$(SC):CHAR1,0
,1,"CITIES:"+STR$(C)
220 IFC<1ORSC>5000THEN240:ELSE90
230 REM GAME OVER
240 GRAPHICO,1:FORX=1TO8:SPRITE,X,0:NEXT
250 FORY=5TO18
260 IFSC>5000THEN CHAR1,8,Y,"*** ORION
IS SAFE ***":GOTO280
270 CHAR1,8,Y,"***ORION DESTROYED***"
280 NEXT
290 SLEEP2:CHAR1,10,20,"FINAL SCORE:"+ST
R$(SC)
300 CHAR1,1,22,"PLAY AGAIN (Y/N)?"
310 GETKEYQ$:IFQ$="Y"THENRUN:ELSEIFQ$<>"
N"THEN310
320 END
330 REM EXPLODE CITY
340 BX=RSPPOS(X,0)
350 MOVSPRX,INT(RND(1)*150+101),0
360 CX=0:IFBX>38THENIFBX<85THENCX=1
370 IFBX>113THENIFBX<160THENCX=2
380 IFBX>188THENIFBX<235THENCX=3
390 IFBX>263THENIFBX<310THENCX=4
400 IFCX=0THEN440
410 IFC(CX)=1THEN440
420 GSHAPE E2$,CX*75-45,144:SOUND1,1000,
100,0,0,0,3:C=C-1
430 GSHAPE B2$,CX*75-45,144
440 C(CX)=1:RETURN
450 REM EXPLODE BOMB
460 Q1=BUMP(1):IFQ1=0THENRETURN
470 FORW=1TO8
480 IF(Q1AND(2↑(W-1)))THEN490:ELSE540
490 COLOR4,2
500 IFW>3THEN530
510 MOVSPRW,0 #0:MOVSPRW,W*80+5,230
520 SOUND1,2000,50,0,0,0,3:SC=SC+125:GOT
O540
530 MOVSPRW,INT(RND(1)*350),0
540 NEXT:Q1=BUMP(1):COLOR4,1:RETURN
550 REM INTRO

```

MORE →

**Alteration**—Change the color of your missiles by change the third number of the **SPRITE** statement in line 680. For example **SPRITE X,0,7** will make them blue.

**Programming Note**—Make the graphic character in line 690 by typing **SHIFT-Z** two times.

**Programming Note**—Make the graphic character in line 730 by typing **SHIFT-B**.

**Programming Note**—Make the graphic character in line 740 by typing **COMMODORE-K**.

**Programming Note**—Make the first graphic character in line 750 by typing **COMMODORE-U**. Make the second by typing **COMMODORE-T**.

**Alteration**—You may want to add some clouds or a sun to the sky, as in *No Free Lunch*. Add **DRAW** statements in lines near line 840.

```

560 PRINT "{CLR}"TAB(17);"{RVON}ORION":PR
INT "{C/DN}DEFEND ORION WITH ANTI-MISSILE
"
570 PRINT "INTERCEPTORS.":PRINT "{C/DN}PRE
SS KEYS 1-3 TO LAUNCH YOUR MISSILES."
580 PRINT "{C/DN}{C/DN}DIFFICULTY LEVEL (
1-5)?";
590 GETKEYQ$:IFQ$<"1"ORQ$>"5"THEN590
600 PRINTQ$:NM=VAL(Q$)
610 PRINT "{C/DN}{C/DN}HIT ANY KEY TO STA
RT"
620 GETKEYQ$:PRINT "{CLR}"
630 REM DRAW INTERCEPTOR
640 COLOR 0,16:COLOR 4,1:COLOR5,7:GRAPHI
C1,1
650 DRAW 1,24,14 TO 22,23 TO 22,26 TO 26
,26 TO 26,23 TO 24,14
660 PAINT 1,24,23
670 SSHAPE A$,11,10,34,31
680 FORX=1TO3:SPRSAY A$,X:SPRITE X,0,3:MO
VSPRX,X*80+5,230:NEXT
690 SCNCLR:CHAR1,0,0,"◆"
700 SSHAPEA$,0,0,23,21
710 FORX=4TO8:SPRSAY A$,X:SPRITE X,1,7:M
OVSPR X,INT(RND(1)*350),0:NEXT
720 SCNCLR:SSHAPE B2$,0,0,33,33:COLOR1,1
730 CHAR1,0,1,"I"
740 CHAR1,1,2," ",1:CHAR1,3,2,"■"
750 CHAR1,0,3,"— = ",1
760 SSHAPE CT$,0,0,33,31
770 SCNCLR:COLOR1,12
780 CIRCLE1,16,8,16,7:PAINT1,16,8
790 FORX=0TO10:DRAW1,11+X,5 TO (3*X)+2,3
2:NEXT
800 SSHAPE E2$,0,0,33,31
810 SCNCLR:COLOR1,8
820 COLOR1,8:FORX=0TO2
830 BOX1,0+80*X,176,69+80*X,199,0,1:NEXT
840 BOX1,240,176,319,199,0,1
850 RETURN

```

# Berserkotron

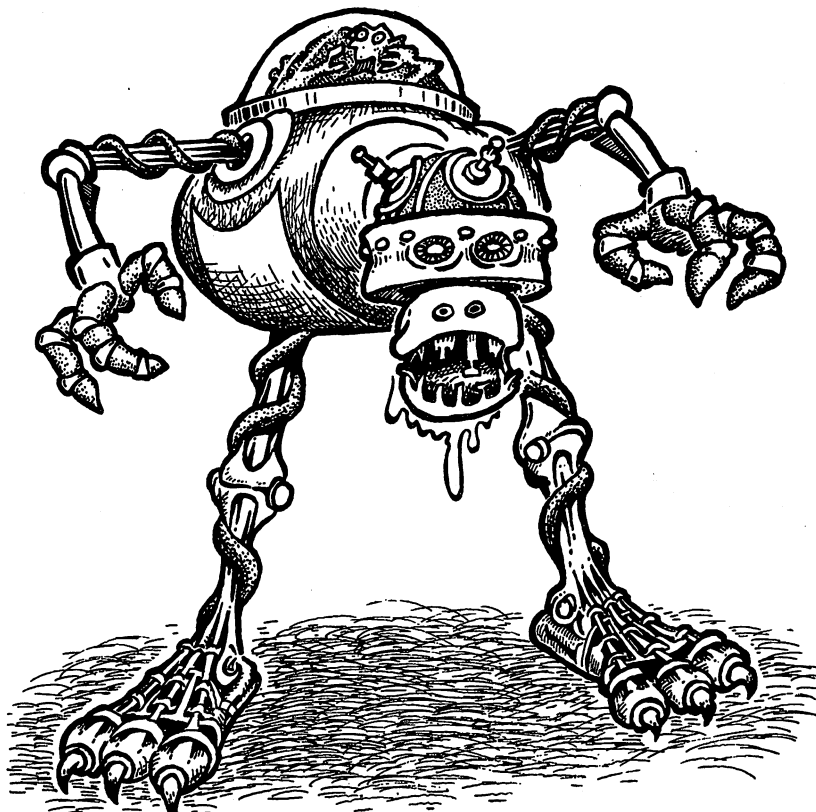
You're applying for a job at a computer-game factory, but get lost in a room of berserk robots. Escaping through one of three exits is your only hope of survival.

This is made difficult because the robots chase you. Though berserk, they aren't stupid. They have a computer-aided ability to track your every move. However, you can use the barriers in the room to block a robot's progress. Good luck! Bach's Bourée has been adapted for your listening pleasure prior to the game.

**Alteration**—To change musical instruments, change the value of the variable following the letter T in lines 40 and 50 to a number from 1 to 9. For example, use 3 for an electric drum: 40 PLAY "V104T3U8X0": REM VOICE 1 = ELEC DRUM

```
10 REM BERSERKOTRON
20 SCNCLR
30 TEMPO 12:REM BOUREE BY BACH
40 PLAY "V104T4U8X0":REM VOICE 1 =FLUTE
50 PLAY "V204T6U8X0":REM VOICE 2=HARPSIC
HORD
60 A$="V104IEV202IGV104I#FV202I#F":REM O
PENING NOTES
70 B$="V104Q6V202QEQAV104I#FIEQ#DV202QBQ
AV104IEI#F":REM 1ST MEAS.
80 C$="V103QBV202QGG#FV104I#CI#DQEQ#FV20
2QEQ#EV104IDIC":REM 2ND MEAS.
```

MORE →



**Alteration**—Change the second number in the **COLOR** statements of line 140 to change the color of the background (**COLOR 0**) and the border (**COLOR 4**). Use values from 1 to 16.

```

90 D$="V103QBV202QGGQAV103IAIGQ#FV202QBQA
V103IGIA":REM 3RD MEAS.
100 E$="V202QGV103IBIAV202QBV103IGI#FQEV
202IEI#FICV104IEI#FV202I#F":REM 4TH MEAS
.
110 F$="V103QBV202QGGQCV103IAIB.Q#FV203QD
QDV103IGHGV202HG":REM LAST MEAS.
120 PLAY A$:PLAY B$: PLAY C$: PLAY D$:PL
AY E$
130 PLAY B$: PLAY C$: PLAYF$
140 COLOR4,7:COLOR0,16
150 PRINT"{CLR}{GRY1}"TAB(14);"{RVON}BER
SERKOTRON"
160 PRINT"{C/DN}{C/DN}ON THE WAY TO INTE
RVIEW FOR A JOB AS A"
170 PRINT"COMPUTER GAME TESTER YOU MADE
A WRONG":PRINT"TURN..."
180 PRINT"{C/DN}YOU FIND YOURSELF IN THE
ROBOT ROOM AND":PRINT"YOU ARE NOT WELCO
ME!"
190 PRINT"{C/DN}YOU MAY USE JOYSTICK #2
OR THE CURSOR"
200 PRINT"KEYS TO RUN THROUGH THE SIDE O
R BOTTOM"
210 PRINT"DOORS, WHICH WOULD YOU LIKE (J
/K)? ";
220 GETKEYQ$:IFQ$<"J"ORQ$>"K"THEN220:ELS
EV=ASC(Q$)-74:PRINTQ$
230 PRINT"{C/DN}PLEASE ENTER YOUR FIRST
INITIAL"
240 GETKEYI$:IFI$<"A"ORI$>"Z"THEN240:ELS
EI=ASC(I$)-64
250 PRINT"{CLR}{C/DN}YOU MUST AVOID THE
ROBOTS ({RVON}R{RVOF})."
260 PRINT"{C/DN}YOUR ONE ADVANTAGE IS TH
AT YOU CAN GO"
270 PRINT"THROUGH THE BLACK CIRCLES WHIL
E THE"
280 PRINT"ROBOTS CANNOT. BUT THE CIRCLES
VANISH"
290 PRINT"AS YOU PASS THROUGH, SO BE CAR
EFUL."
300 PRINT"{C/DN}HIT ANY KEY TO START."
310 GETKEYQ$:PRINT"{GRY1}{CLR}"
320 C=1106:N1=19:N2=36:K$="{C/UP}{C/RT}{
C/DN}{C/LF}":SP=32:RB=146:DV=40:DH=1:BL=
160:PD=46
330 FORX=1065TO1102:POKEX,160:POKEX+800,
160:NEXT
340 FORX=1105TO1825STEP40:POKEX,160:POKE
X+37,160:NEXT
350 POKE1465,46:POKE1502,46:POKE1884,46

```

```
360 FORX=0T0199:POKEC+DV*INT(RND(1)*N1)+(RND(1)*N2),81:NEXT
370 R(1)=1466:R(2)=1501:R(3)=1844:L=C+18
380 FORX=1T03:POKER(X),RB:NEXT:POKEL,I
390 REM START MOVEMENT
400 IFVTHEN420
410 ON JOY(2)+1 GOTO510,430,510,440,510,450,510,460,510
420 GETQ$:ON INSTR(K$,Q$,1)+1 GOTO510,430,440,450,460
430 D=-DV:GOTO470
440 D=DH:GOTO470
450 D=DV:GOTO470
460 D=-DH:GOTO470
470 SOUND1,3000,1,0,3000,1,3
480 IFPEEK(L+D)=BLTHEN510
490 IFPEEK(L+D)=PDTHEN640
500 POKEL,SP:L=L+D:POKEL,I
510 LY=INT((L-C)/DV):LX=L-C-LY*DV
520 FORX=1T03:D=0
530 RY=INT((R(X)-C)/DV):RX=R(X)-C-RY*DV
540 IFRX<LXTHENIFPEEK(R(X)+DH)<PDTHEND=DH:GOTO580
550 IFRX>LXTHENIFPEEK(R(X)-DH)<PDTHEND=-DH:GOTO580
560 IFRY<LYTHENIFPEEK(R(X)+DV)<PDTHEND=DV:GOTO580
570 IFRY>LYTHENIFPEEK(R(X)-DV)<PDTHEND=-DV
580 IFPEEK(R(X)+D)=IThen600
590 POKER(X),SP:R(X)=R(X)+D:POKER(X),RB:NEXT:GOTO400
600 REM CAUGHT
610 COLOR4,3:SOUND1,20000,490,2,10000,100
620 SLEEP8:COLOR4,7:SLEEP2
630 PRINT"{CLR}{C/DN}{C/DN}"TAB(12)"YOU WERE CAUGHT!":GOTO660
640 REM SAFE
650 COLOR4,6:SLEEP4:PRINT"{CLR}{C/DN}{C/DN}"TAB(14)"YOU MADE IT!":COLOR4,7
660 PRINT"{C/DN}{C/DN}{C/DN}"TAB(11)"PLAY AGAIN (Y/N) ?"
670 GETKEYQ$:IFQ$="Y"THENRUN:ELSEIFQ$<>"N"THEN670:ELSE END
```

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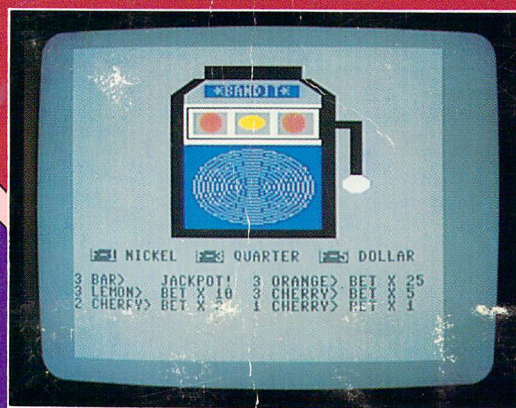
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